THIRTY-FIVE CENTS JUNE 1958

HORTICULTURE

America's Authentic Garden Magazine

Cooley's IRIS

300 NEWEST AND BEST...

GRAND NEW PINKS
GORGEOUS BROWNS & TANS
BRILLIANT BLUES
GOLDEN YELLOWS
SPARKLING WHITES
BLENDS WITHOUT END

SPECIAL "RAINBOW" GROUP

All 11 shown for **$5.00**
Plus one Flamingo Pink **Free!**

The colorful array of large size Tall Bearded Iris alongside will give your garden a real lift. All are hardy, easy growers and will increase rapidly. Every plant guaranteed A-1 quality, top size, Oregon-grown, correctly labeled and postpaid. (An $8.40 value)

5 IRIS OF THE YEAR $7.50

Solid Gold, deep yellow..... **$2.00**
Cloud Cap, giant pink..... **2.00**
Port Wine, dark plicata..... **2.50**
Blue Sapphire, pale blue..... **2.50**
Accent, red and yellow..... **2.00**
(value $11)

6 GRAND NOVELTIES $25.00

Front Page, gold and ivory..... **$7.50**
Mary Randall, deep rose..... **5.00**
Sable Night, velvety black..... **7.50**
May Hall, melting pink..... **7.50**
Surprise Party, opal standards, apricot falls..... **5.00**
Rehobeth, huge sky blue..... **7.50**
(value $40)

SEND 25c for AMERICA'S FINEST IRIS BOOK

52 pages, loaded with colored pictures. Over 100 natural color illustrations, money-saving collections, lists and describes almost 300 modern varieties. If you are planning to plant your first Iris, or if you are a seasoned Iris expert, you must see and own this beautiful book. Actually a collector's item—it can not be distributed without charge; the 25c fee may be deducted from your first order. It costs us almost double that amount. Free with orders from page.

$5.00 for all these!

Pinnacle 1.00
Blue Rhythm 75c
Goldbeater 60c
Grand Canyon 60c
Three Oaks 75c
Desert Song 75c
Ballet Dancer 1.00
Lady Mohr 1.00
Sylvia Murray 75c
Voodoo 60c
Vice Regal 60c

Cooley's GARDENS
BOX H, SILVERTON, OREGON

Jackson & Perkins invites you to attend the annual

ROSE FESTIVAL

Newark, New York • June 15-29

Or be sure to visit our Rose Garden any time during the season—Open from June 1st to October 15th

ROSE FESTIVAL ATTRACTIONS

- *17 acres of the world's finest Modern Roses... Hybrid Teas, Floribundas, Tree Roses, Climbers, Novelties, All-America Winners*
- *Important rose varieties growing under ideal conditions*
- *4 new home-size rose gardens—showing you how you can use roses to best advantage in your garden*
- *Magnificent 400-ft. Perennial Border*
- *Famous radio stars, Coronation of Rose Princess and 4-H Queen, a concert—and many other special events*
- *Our attendants always willing to help you solve your gardening problems*

Reserve Your FREE Copy of J&P's New Fall 1958 CATALOG OF ROSES

In a few weeks, our brand-new Fall 1958 Catalog of Roses and Perennials will be ready for general distribution. To make sure that you receive your *free* copy, mail the coupon *at once* — and we will send you a copy as soon as it comes off the press. You won't want to miss this exciting new issue — for it contains all the *brand-new* J&P Roses — as well as all the established favorites — *plus* scores of hardy J&P Perennials — *plus* money-saving group offers, planting hints, etc. Remember to reserve your *free* copy, mail coupon NOW.

HOW TO GET TO J&P

Newark, NEW YORK, is on Route 31, between Syracuse and Rochester. Or, Route 88, East Exit 42 or West Exit 43, if you are on the Thruway. Also on the main lines of the New York Central R.R. and Greyhound Busses.

JACKSON & PERKINS CO.
423 Rose Lane, Newark, New York

Please reserve for me a FREE copy of your big, new Fall 1958 Rose Catalog, picturing and describing the newest and best in easy-to-grow J&P Modern Roses and Perennials . . . all in full natural color. I am to receive my copy as soon as it comes off the press.

Name_____

Address_____

City_____ Zone____ State_____

Jackson & Perkins Company

World's Largest Rose Growers NEWARK, NEW YORK

Made for each other!

YOUR LAWN and AGRICO®
The No. 1 choice in Plant Food of America's Gardeners

This Spring, start your lawn going steady and growing steady with AGRICO . . . you'll love the healthier, deep-green turf that results.

AGRICO for LAWNS, TREES & SHRUBS—*The Home Owner's Favorite*... perfect for early spring feeding to give your lawn a strong start.

AGRICO for TURF 50% Natural Organic Nitrogen—*The Golf Course Favorite* . . . works wonders on home lawns, too!

AGRICO for TURF with UREA-FORM—*The Premium Fertilizer* . . . matches the release of vital nitrogen to your lawn's feeding needs.

Remember, it pays to use the right AGRICO Fertilizer for each plant feeding job:

- **AGRICO ROSE FOOD** — formulated to make your roses produce their very best.
- **AGRICO FOR GARDENS** — vital nutrients for your flowers and vegetables.
- **AGRICO NO-PEST Turf Food** —Wipes out turf-wrecking insects for years, while it nourishes your lawn.
- **AGRICO for AZALEAS, CAMELLIAS, RHODODENDRONS**—Feeds all acid-loving plants right . . . maintains soil acidity.

Made only by
THE AMERICAN AGRICULTURAL CHEMICAL CO.
New York 7, N. Y.
31 Factories in U. S., Canada and Cuba

MRS. ROBERT BARTON'S GARDEN SHOP IN A LOVELY GARDEN AT
75 Granite Street — *Off Route 140*
FOXBORO, MASSACHUSETTS
Unusual containers in alabaster and old metals. Lead and Stone garden accessories.
Tel. Kingswood 3-5498

QUALITY ORCHID PLANTS
BLOOMING SIZE **$2.00** UP — Plus Postage
Visitors Welcome — Open Daily 10 a.m. to 4 p.m.
Send for Free Price List
ORCHIDVALE
68 Hart Street, Beverly Farms, Massachusetts

HORTICULTURE

America's Authentic Garden Magazine

CONTENTS • JUNE 1958

VOL. XXXVI—NO. 6

Letters To The Editor 301
Coming Events 303
New Books 304
Readers' Questions Answered 306
What Earthworms Do To Soil ..... *Haydn S. Pearson* 310
Choice Shrubs For Rock Gardens 311
What Atomic Radiation Does ..... *H. B. Tukey, Jr.* 313
Floribundas from May To Frost ..... *John R. Patterson* 314
Start A Garden With Annuals ..... *Olive E. Allen* 317
Gardening In Window Boxes ..... *Louise Bush-Brown* 318
How To Make Hanging Baskets ..... *C. Roy Boutard* 320
Grow Fuchsias In Pots ..... *Mark MacDougall* 321
Now Is The Time 322
Summer Lawn Care ..... *Jessie de France & J. R. Kollett* 324
Summer Care Of Camellias ..... *Mary Noble* 325
How To Grow An Avocado 326
Be Your Own Propagator ..... *Roy M. Nordine* 328
Crossandra Has Everything ..... *Keith S. Phillips* 330
Violas Are For Shade ..... *Betty Jane Hayward* 331
The Flower Garden At Mount Vernon .. *Robert B. Fisher* 332
Consider Our Native Azaleas ..... *Fred C. Galle* 335
Clubs And Societies 346
Pennsylvania Horticultural Society 346
Massachusetts Horticultural Society 346

OUR COVERS

Front—"Window Box Time" (See story on page 318)—John P. Roche
Inside Back—"A Garden of Pot Plants"—Stockbridge Garden Center—P. E. Genereux
Back—"Fuchsia in a Tub" (See story on page 321)—John P. Roche

COLOR INSERTS

Page 315—"Floribundas Along A Walk"—Garden of Mr. & Mrs. Maurice I. Miller—Nelson Groffman
Page 316—"Border of Annuals"—Garden of Mr. & Mrs. John R. Fitzgerald—Nelson Groffman
Page 333—"The Flower Garden At Mount Vernon"— Courtesy: Mount Vernon
Page 334—"Flame Azalea"—P. E. Genereux

Arno H. Nehrling, *Director of Publications*
George Taloumis ..... *Editor*
H. Gleason Mattoon ..... *Assistant Editor*
Robert D. Wyman ..... *Assistant Horticulturist*
Arthur B. Pausch ..... *Circulation Manager*
Arthur C. King ..... *Advertising Manager*
Paul E. Genereux ..... *Photographer*

ADVISORY BOARD
Edward Dane ..... Ernest Hoftyzer
Stedman Buttrick ..... Harold S. Ross

Horticulture is printed by The Rumford Press, Concord, New Hampshire. Micro-Color Lithography by W. A. Krueger Co., Milwaukee, Wisconsin. Halftones by Franklin Engraving Co., Boston, Massachusetts.

HORTICULTURE: June 1958 • Volume XXXVI, No. 6 • Issued Monthly. Published at Horticultural Hall, Boston 15, Mass. Subscription Rates (in advance). One year $4.00. Canada $4.00. Foreign Countries, $5.00. Second-class mail privileges authorized at Boston, Mass. Acceptance for mailing at special rate of postage, authorized August 14, 1952. Address all correspondence relating to Subscriptions and Advertising to Horticulture, 300 Mass. Ave., Boston 15, Mass.

MEMBER OF AUDIT BUREAU CIRCULATIONS

A. B. McClanahan & Co.—East Coast Advertising Rep., 295 Madison Ave., New York 17, New York, Walter R. Dimm—West Coast Advertising Rep., 3533 N.E. 21st Ave., Portland 12, Oregon. Russell B. Smith—North Central Advertising Rep., 205 West Wacker Dr., Chicago 6, Illinois. S. M. Masse—East Central Advertising Rep., 11118 Clifton Blvd., Cleveland 2, Ohio.

It Does a Better Job

Dear Editor—In replacing glass in a coldframe sash, I have found asbestos fibre roof cement, available at building supply or paint stores, easier to apply than putty. It also does a better job.

First remove the old putty. Since it is not necessary to staple in the glass with glazier points, apply the cement with a putty knife or a wooden spatula. Any smearing on the glass can be cleaned with turpentine.

A valuable feature of this method is that after the cement is set it retains a degree of plasticity which allows some give with the frame.

—Dr. B. H. Adams
Edgewood, Md.

Success At Last!

Dear Editor—I am writing to tell you about the success I have had by following the suggestions given by Carl Grant Wilson of Cleveland, Ohio, in his article, "How I Grow Delphiniums", which appeared in the April, 1957, issue of Horticulture.

Each time I tried to grow delphiniums before that, whether from seed or from plants purchased at a nursery, I had no success.

By carefully following each step in the article I had attractive flowering plants by last fall. Mr. Wilson stated that he does not stake his plants the first season, but mine were so tall and full of flowers that they required support. I also followed each step given for winter protection.

—Priscilla Sanderson
South Lincoln, Mass.

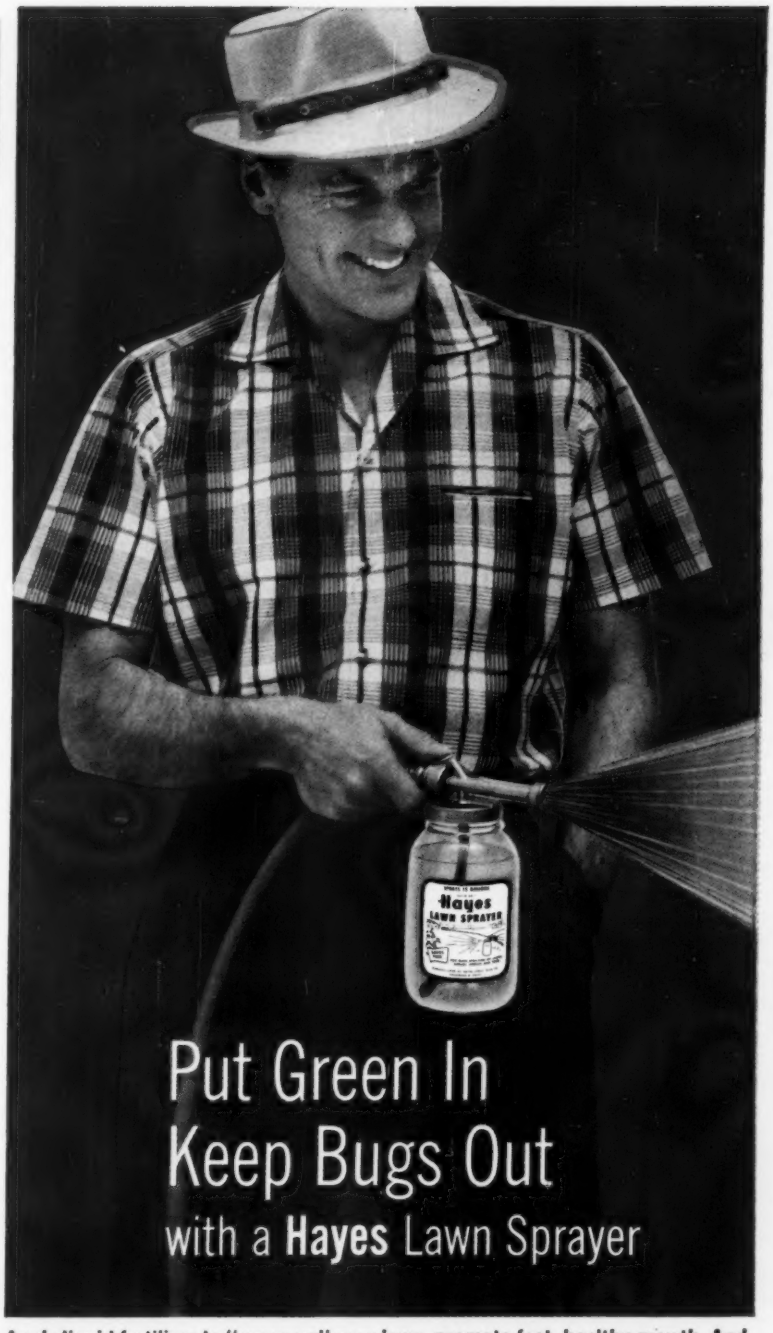
It Makes Tying a Pleasure

Dear Editor—I have found that ordinary plastic covered door-bell wire makes the staking and tying of plants a pleasure.

The wire is sold in small rolls, just right for slipping over the wrist. With cutters clipped to the belt, hands are free for stakes and hammer. Bell wire does not need to be tied like cord, only hooked or twisted to itself.

Available from most hardware and electrical supply stores in a variety of colors, bell wire will hold any given shape, unless the pull is too strong, so that a plant, when tied, can be pulled out in one part and pushed in at another to bring out the best effect. In the greenhouse, it is invaluable for tying the pseudobulbs of orchids.

—Alma Byhre Bond
Washington, D. C.



Apply liquid fertilizer to "green up" your lawn, promote fast, healthy growth. And, use insecticide to kill destructive lawn and soil pests.

With the Hayes Lawn Sprayer you can do both. It mixes, proportions and applies spray materials automatically. You get accuracy in spray mixture, uniform distribution... more efficient application than with any other type of lawn sprayer made. Lowest cost per year of service, too! Hayes Spray Guns are approved by leading manufacturers of garden and lawn chemicals. Backed by 7 U.S. Patents. Available at nursery and hardware dealers.

HAYES LAWN SPRAYERS: For liquid fertilizers, lawn moth solutions, fungicides, weed killers, herbicides, etc. In three handy models. From $2.95. **HAYES GARDEN SPRAYERS:** For insecticides, fungicides, crabgrass killers, fly, ant and termite control. In 1½, 3, 4, 6 and 12 gallon sizes. From $2.95. Write for Free 20-page booklet on garden and lawn care—"How to Win the Battle of the Bugs." **HAYES SPRAY GUN COMPANY** • World's largest manufacturer of garden hose sprayers • Since 1934 • **98 North San Gabriel Boulevard, Pasadena, California—Department H**

"Better than 5 Wheelbarrows"

IDEAL FOR SERIOUS GARDENERS

Many, many more uses than a wheelbarrow! Holds 3 times the volume, 5 times the weight. Pushes much easier, thanks to TWO BIG 30" wheels.

Weight balances on axle—you don't have to carry it in your hands. Won't tip over. Can't spill things out the side. Use with practically any Garden Tractor. Removable tailgate for easy dumping.

Built by Vermont Craftsmen to last 100 years. Just paint it every year or so. Leave it outdoors all year long if you want. Has countless uses around any country place or farm. When you've had it a week, you'll wonder how you ever did without it.

Satisfaction guaranteed. If you are not delighted with the Cart, ship it back within 3 months. We'll refund full purchase price. Write TODAY for FREE illustrated circular, attractive prices. Sold only by mail.

THE COUNTRYMAN'S CART
Box 1806 Hinesburg, Vermont

BURNS TRASH SAFELY OUTDOORS

End fire hazards — neighborhood nuisance of blowing burning bits of paper — sooty ash. Scientific draft design minimizes smoke, smell—burns damp, green, dry, garbage or refuse to fine ash. Needs no watching. Burns in any weather. Quickly pays for itself. Made of rust-resistant aluminum bonded to steel for longest service. Over 150,000 satisfied users. Approved by fire depts. 2 bushel model A (21½" x 27")—$14.95 postpaid. 3 bushel model B (24" x 32")—$18.95 postpaid. Money back guarantee. Stainless steel models available.

ALSTO COMPANY
Dept. H-6, 4007 Detroit Avenue, Cleveland 13, Ohio

ATTRACTIVE GARDEN SIGN

A very lovely old poem that will make your friends and neighbors envious of you. On weatherized board and enameled for outdoors. White with green letters. This makes an excellent gift for your Garden Club associates. Choice of two sizes: 6" x 14"—$1.35 or 9" x 21"—$2.65, prepaid.

PINECREST Distributing Company
Dept. 6H, 22 Concord St., Portland, Maine

THE FOUNTAINHEAD

44 SIDNEY AVE. LYNN, MASS.

CUSTOM DESIGNED
GARDEN POOLS
GARDEN LIGHTING FIXTURES
GARDEN ORNAMENTS
FOUNTAINS
CATALOG 25¢
Phone: Lynn 2-9100
Evenings: Neptune 8-5002

Here is a KNEE REST

. . . that brings real gardening comfort

- Supports provide easy aid to getting up and down.
- Foam padding saves knees.
- Convenient trough holds seed, garden tool, gloves, etc.
- Light and easy to move often.
- Useful for every kneeling job indoors or outdoors.

Made of sturdy steel construction with chrome plated arm supports to hold any weight person it will give long lasting service. *Size 17-inch width: 10½ inch deep with arm supports, 14 inches high.*

Price **$8.95** postpaid

FLORAL ART Highland Station
Post Office Box 394 H6, Springfield, Massachusetts

GARDEN HOSE ATTACHMENT

SOAKEZE does a good job watering shrubs, especially rose bushes. Saves much time and work. Attach it to your garden hose; the 5 small plastic hoses spread out in any direction to soak roots of 5 plants, some 24 feet apart, without waste of water. Guaranteed to please you or your money refunded. Complete unit only $5.95 postpaid. Send check or Money Order. Jons Mfg. Co., Dept. J-9, Saint Matthews, South Carolina.

WINNER'S NICHES

For that ideal display, used by garden clubs, instructors and amateurs. These flower units are collapsible, durable and portable. Two standard exhibit sizes in natural green shade that fold into storage carton. 24" high x 20" wide x 18" deep, or, smaller size, 12" high x 10" wide x 7" deep. $3.95 for unit (one of each size) plus 35¢ postage. Special price on order of 6 units or more. For full information write Winner's Niches, Ltd., P.O. Box 262, Doylestown, Bucks Co., Pennsylvania.

POSEY BOARDS

Here is a beautiful, hand-carved wood base for flower or fruit arrangements. These Posey Boards will beautify and enhance your table setting regardless of what the occasion may be. Makes an ideal gift for the discriminating hostess. Sizes: 20" x 11"—$4.50; 14" x 9"—$3.50; or set, one of each, only $7.00 ppd. (Add 50¢ west of Mississippi). Exclusively yours at Mrs. Robert Barton's Garden Shop, 75 Granite St., Foxboro, Mass.

COMING EVENTS

June 10-11. Boston. Iris Show, Mass. Horticultural Soc., Horticultural Hall

June 14-15. Northlake, Ill. Flower Show, Northlake Women's Garden Club, Riley Elementary School

June 16-17. Boston. Rose Show, Mass. Horticultural Soc., Horti. Hall

June 17-18. Buffalo, N. Y. Horticulture School, Course IV, Federated Garden Clubs of N. Y. State

June 18-July 2. Kennett Square, Penna. Garden Display & Colored Electric Fountains Display, Longwood Gardens

June 18-19. Vancouver, B. C., Canada. Annual Rose Show, Canadian Rose Soc., Kerrisdale Community Center

June 18-19. Staunton, Va. Annual Lily Show, Garden Club of Virginia & Augusta Garden Club, Bessie Weller School

June 18-20. Hudson, Ohio. Annual House & Garden Pilgrimage, Hudson Garden Club. Write: Mrs. Andrew A. Jyurouat, Woodlake Farm, Peninsula, Ohio

June 21. Ipswich, Mass. Meeting, N. E. Branch, American Begonia Soc., Crane Estate, Ipswich, & Estate of Mrs. Daniel Huger, Essex

June 21. Ames, Ia. Rose Short Course, Iowa State College

June 21-22. Bakersville, N. C. Roan Mountain Rhododendron Festival, Craggy Gardens, Pisgah National Forest

June 23. Toronto, Canada. Rose Show, Canadian Rose Soc., Hart House, Univ. of Toronto

June 24-25. Brooklyn, N. Y. Horticultural School, Course III, Federated Garden Clubs of N. Y. State, Brooklyn Botanic Garden

June 24-27. Madison, S. D. Convention, S. D. Fed. of Garden Clubs & State Horticultural Soc., Elks Bldg.

June 25-27. San Diego, Calif. Annual Meeting, Entomological Soc. of America, Pacific Branch, El Cortez Hotel

June 27-28. Victoria, B. C., Canada. Rose Show, Victoria Horticultural Soc., Crystal Palace

July 7-9. Seattle, Wash. Lily Show, Puget Sound Lily Soc., Frederick & Nelson's Exhibition Hall

July 8-9. Ithaca, N. Y. Horticulture Work Shop, Federated Garden Clubs of N. Y. State, Cornell Univ.

July 10. Worcester, Mass. Lilies & Delphinium Show, Worcester County Horticultural Soc., Horticultural Bldg., 30 Elm St.

IRISES

IN BLOOM FROM EARLY APRIL TO LATE JULY

JUST THINK OF IT! *4 Solid Months of Colorful Iris Blooms*

Plant these irises this year and enjoy 4 solid months of colorful beauty in your garden year after year. All are hardy, permanent and easily grown with ordinary garden care. Top Quality Oregon-Grown Plants and Bulbs.

for APRIL BLOOMING we offer our SPRING CAPER COLLECTION of Dwarf Bearded Iris

TINY TREASURE—Dainty golden yellow.
BLACK HAWK—Velvety black purple.
RED ORCHID—Rich wine red.
CREAM DELIGHT—New ivory self. Large flower.
MACROCARPA—Earliest deep violet purple.
LITTLE OCHRACEA—Cream and rose variegata.
LOUISE STARKER—Reblooming pure white.
VELVO—Velvety mahogany purple.

ALL 8 SPRING BEAUTIES $3.00
Catalog Value $3.40

for MAY BLOOMING we offer our RAINBOW COLLECTION of Giant Bearded Iris

PINK FORMAL—Pink with tangerine beard.
JANE PHILLIPS—Enormous frosty blue.
PINNACLE—New white and yellow bicolor.
SUNSET BLAZE—Huge reddish copper blend.
BLUE SHIMMER—Ruffled white edged blue.
PAGEANTRY—Immense new buff and garnet red
RED MAJESTY—One of the best new reds.
DAWN REFLECTION—Beautiful ivory white trimmed rose red.
SHARON KAY—Loveliest orchid pink.
OLA KALA—Golden yellow. Highest award winner.

ALL 10 HANDSOME GIANTS $5.95
Catalog Value $10.50

for JUNE FLOWERING we offer our GIANT DUTCH IRIS of recent introduction

Easily grown anywhere and unsurpassed as cut flowers.

PRIDE OF HOLLAND—Finest new golden yellow. Large ruffled flowers.
KING MAUVE—Violet mauve or near orchid. Beautiful variety.
PANAMINT—Gigantic cream and gold. Very early.
BLUE RIBBON—Velvety royal blue. Large plant and flower.
LE MOGOL—Distinctive copper brown self.
WHITE PERFECTION—Finest pure white.

3 BULBS OF EACH (18 Bulbs) $2.50

for JULY BLOOMING we offer our ORIENTAL COLLECTION of gorgeous Japanese Iris

These huge flowers up to dinner-plate size come in colors ranging from light orchid pink to deepest crimson, sky blues to deepest blues, purest lavender to darkest purple. Also pure white and whites with colored veins or borders. Bloom after the bearded iris are past.

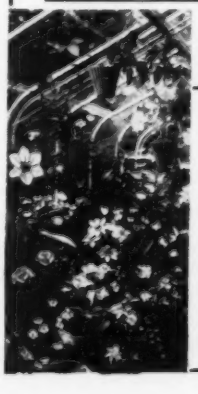
6 HEAVY CLUMPS.....$3.95
All different

SPECIAL PRICE FOR ALL 4 COLLECTIONS (Catalog value $23.50)..$12.95
LABELED AND POSTPAID

Walter Marx Gardens

BOX 38-H6 BORING OREGON

***Garden Now in an Everlite* Aluminum Greenhouse**

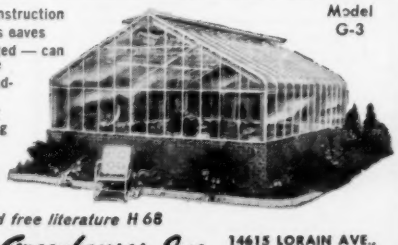


Whatever your favorite flowers — mums, geraniums, gardenias, African violets — enjoy them throughout the winter with an EVERLITE "garden under glass".

- Maintenance free construction
- Graceful curved glass eaves
- Precision prefabricated — can be expanded anytime
- Lean-to and free standing models
- Full line of EVERLITE accessories, including automatic heating, ventilating and humidifying

Models from $187.50

Model G-3



Write for prices and free literature H 68

Aluminum Greenhouses, Inc.

14615 LORAIN AVE., CLEVELAND 11, OHIO

de Jager

OUR
NEW 1958 FALL
CATALOG
IS NOW READY

•

100 PAGES
Many COLOR PLATES
STILL ONLY **25¢** *

•

The Most Authoritative Catalog on All
IMPORTED HOLLAND and FALL PLANTED BULBS

Featuring:

TULIPS: Bizarre and Bijbloemen: Botanical Species, Breeder, Cottage, Darwin, Darwin Hybrids, Double Early, Double Late, Fosteriana, Fringed, Kaufmanniana, Lily-flowering, Mendel, Parrot, Rembrandt, Single Early, Triumph, Viridiflora.

DAFFODILS & NARCISSI: Trumpets: Large-cup, Small-cup: Double, Triandus, Cyclamineus, Jonquilla, Tazetta and Poeticus Narcissi: Paperwhites, Miniatures and Various Species.

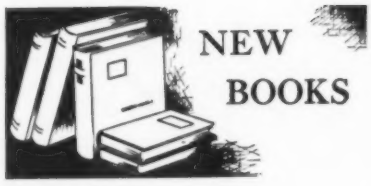
Also:

Allium	Freesia	Ornithogalum
Amaryllis	Fritillaria	Oxalis
Anemones	Gladioli	Peonies
Brodiaea	Hyacinths	Puschkinia
Bulbocodium	Iris	Ranunculus
Camassia	Ixia	Richardia
Chionodoxa	Ixiolirion	Scilla
Colchicum	Lachenalia	Snowdrops
Crocus	Leucojum	Sparaxis
C. Species	Lilies	Sternbergia
Cyclamen	Milla	Tecophilea
Eranthis	Muscari	Tritonia
Eremurus		Veltheimia

Free Bonus

Send 25¢ for your Fall Bulb Catalog and receive with it FREE our exclusively designed Bulb Landscape Plan—adaptable to any plot. You may deduct 25¢ from your fall bulb order.

So. Hamilton 39, Mass.
CANADIAN OFFICE
Hamilton Road East
R.R.8, London, Ontario
HEAD OFFICE AND NURSERIES
Heiloo, Holland



NEW BOOKS

Compendium of Information

GARDENING, FORCING, CONDITIONING AND DRYING FOR FLOWER ARRANGEMENTS. *By Arno and Irene Nehrling. Hearthside Press, New York, N. Y. 228 pp. $3.95.*

This is a compendium of terse, factual information for the gardener, as well as the flower arranger. Not only does it tell how to grow flowering trees and shrubs, perennials, annuals, vegetables, herbs, gourds and bulbs in the garden, but it includes information on how these can be used in flower arrangements. Well illustrated with photographs and with line drawings by Charlotte E. Bowden and Charles A. Mahoney, it is an excellent reference volume.

Double in Size

WHAT FLOWERING TREE IS THAT? *By Edwin A. Menninger. Published by the Author at Stuart, Fla. 184 pp. $4.00.*

Mr. Menninger, often called the "flowering tree man", has done so much for horticulture in Florida that he recently was awarded a citation by the American Horticultural Council. His book about Florida trees, which has won him wide renown, now appears in a new edition, double in size and with the addition of more trees as well as more pictures. With it one can identify virtually every tree in the state of Florida. The habits of the different trees are described in detail and cultural requirements have not been overlooked.

Rio Grande Flora

THE GARDEN OF CHAPARRAL. *By Elizabeth M. Riess. Vantage Press, New York, N. Y. 158 pp. $3.00.*

Chaparral is a word applied to the dense growth of brush found in the Lower Rio Grande Valley. In addition to the brush, however, the valley has a great number of miscellaneous, un-allied plants which have come down the Rio Grande River and its tributaries over a long period. They grow lustily in the deep, rich soil which the river waters have deposited over a wide area.

Here Mrs. Riess found an enchanting opportunity for exercising her talents as a botanist. The results are found in this book, which describes the valley's plants and comments on them. The illustrations are line drawings done by the author.

Packed With Information

AN EASY GUIDE TO HOUSE PLANTS. *By Arno and Irene Nehrling. Hearthside Press, New York, N. Y. 100 pp. $2.95.*

This small volume packs an amazing amount of practical information on a large number of flowering and foliage house plants. In addition to the long chapter entitled "Dictionary of Favorite House Plants", others cover the propagating and growing of pot plants, designing the indoor garden, flowering bulbs and water gardens. It is a handy reference book full of useful information for all who seek joy from plants during winter.

For Advanced Gardeners

THE WOMAN GARDENER. *By Frances Perry. Farrar, Straus Cudahy, N. Y. N. Y. 384 pp. $5.00.*

American women gardeners will find Mrs. Perry's book heavy reading. Perhaps women in England, where the book was written, will dig into it with more relish. Actually, there seems to be no good reason why this should be called a book for women in particular, except for the chapters on house plants and flower arranging. It is a rather complete book on garden practices, including grafting, budding, the training of espalier trees and the making of water gardens. Advanced gardeners, men or women, may find suggestions of value in it, provided they remember that conditions across differ.

An Art Revitalized

IKEBANA (JAPANESE FLOWER ARRANGEMENTS). *By Sofu Teshigahara. Studio Publications, Inc., New York, N. Y. 82 pp. $10.95.*

Most American flower arrangers would look askance at the arrangements illustrated in this large and pretentious book. Even after reading the descriptions, they would find it difficult to understand the emotional uplift which the Japanese people receive from these conceptions.

Yet this is a very important book, when considered from the Japanese viewpoint. The many attractive color plates represent the work of Japan's most eminent arranger, who heads a new school. What we know about Sofu comes from a section of the book which is devoted to his life and achievements. It was written by Sumio Mizusawa and reveals much not commonly known here about Ikebana.

According to this writer the whole art of flower composition had sunk to a low level before the war. After the war the Japanese people turned with renewed vigor to this national art. It was then that Sofu surged forward rapidly, according to the author, until he became the outstanding demonstrator of Ikebana in all Japan.

Although living and working in an environment which is wholly foreign to us, Sofu Teshigahara is a great artist. This sumptuous book was printed in Japan, but the text is in English.

Author Individuality

How to Have Good Gardens in the Sunshine States. *By George W. Kelly. Available from author, Littleton, Colorado. 310 pp. $3.25.*

Mr. Kelly is the chief exponent of Rocky Mountain horticulture. He is widely known as the editor of the "Green Thumb". He has a citation from the American Horticultural Council and the Johnny Appleseed Medal of the Men's Garden Clubs of America. He has been writing about gardening in the west for many years, but this is his most ambitious work. As is to be expected, he covers all the angles of amateur horticulture. And, of course, the Kelly individuality stands out on every page, making this a garden book unlike any other.

Revised and Enlarged

America's Garden Book. *By James and Louise Bush-Brown. Charles Scribner's Sons, New York, N. Y. 751 pp. $7.95.*

This is a revised and much enlarged edition of a book which has guided amateur gardeners for nearly 20 years. The new sections deal at length with penthouse and roof gardens, methods used in growing plants under artificial light, lath houses, the newer mulching materials and the best ways to attract birds. New illustrations show modern styles and trends in garden design and construction. The book is essentially one for the do-it-yourself gardener. It is a large book, and while not an encyclopedia in form, it is encyclopedic in its contents.

Small But Select

Cacti and Other Succulents. *By S. H. Scott. Frederick Warne & Co., New York, N. Y. 160 pp. $1.25.*

It appears that cactus plants are both collected and grown indoors to a much greater extent in England, where this book was written, than in this country. Yet there are many American hobbyists, who will find the book a highly useful guide. With 16 plates in full color and 48 in black and white, it serves well as a source of identification. At the same time it describes over 300 species, as well as giving adequate directions as to their culture.

Lithops, often called "living stones" are the most sought for succulents across the water, according to Mr. Scott. They are curious and interesting and nave blossoms, but are less popular as house plants over here than some of the American or Mexican species, such as mammillarias, echeverias and opuntias. The author deals with all of them, but admits that the opuntias are difficult to flower in England.

Of course, the Christmas cactus, crown of thorns, kalanchoe, the stapelia and other familiar kinds are dealt with in detail. This is a small book, but carefully made and very low in price.

For the Best Roses You Ever Grew!

Does Wonders for Entire Garden
FLOWERS, VEGETABLES, LAWNS

Your plants and lawn want to be fed regularly, just as you do. Start feeding with RA•PID•GRO now, and in just a few days they'll begin to respond with luxuriant growth. Strong vigorous plants will reward you more and more as you continue to feed the RA•PID•GRO they need. Contains not just 3 or 4 plant nutrients, but 21 elements, trace elements, vitamins and hormones.

You are not gambling when you use RA•PID•GRO. It's the pioneer in foliar feeding—used successfully since 1932. Over a million satisfied customers—no complaints.

SO EASY TO USE!

Spray it on! Sprinkle it on! Combine it with your insecticides! Use a hose-end sprayer, a hand-sprayer, a siphon sprayer or an ordinary watering can. It doesn't matter how you apply RA•PID•GRO just as long as you dissolve it in water according to simple directions...and then just get it on any part of the plant.

Clean, safe, odorless, easy to handle—a pleasure to use! Can't burn plants when dissolved as directed. Ask your dealer for free 16-page Planting and Feeding Guide—shows RA•PID•GRO advantages all season long.

RA•PID•GRO Makes Roses Perform Miracles

Give your roses a steady diet of RA•PID•GRO for more beautiful blooms in June, up to twice as many this summer...three or four times more new growth...giant, healthy plants such as you've never dreamed possible. It's so easy with RA•PID•GRO! Just sprinkle or spray on your rose plants every ten days. Feeds thru the buds, stems and leaves. You will see results in just a few days!

Send for FREE leaflet telling how to use Antibiotics on Roses

RA•PID•GRO CORP., DANSVILLE, N. Y.

RA•PID•GRO

Get RAPIDGRO from Your Garden Supply Store or Nurseryman NOW

EVERGREENS
(BROADLEAF)

Japanese Andromeda—12 to 15 inches—very hardy, perfect. $3.50 postpaid
10 plants $29.50

HYBRID RHODODENDRONS

Mixed varieties 12 to 15 inches—hardy, A-1 stock. 10 Plants $37.50 $4.50 postpaid

Your satisfaction guaranteed
—Write today for prompt delivery.

CEDARHURST NURSERIES
3044 Pawtucket Ave., Riverside 15, Rhode Island
Member A.A.N.

2 Sample Iris $1.00

(Catalog value $2 or more)
LABELED AND POSTPAID

Selected from the best award winning varieties. You will want more when you receive our excellent plants. Order TODAY while many wonderful kinds are available. CATALOG included free with order.

Iris Catalog 10c — Listing over 450 modern varieties. Many shown in color.

LONG'S GARDENS
Box 19-H Boulder, Colorado

Walpole

Small Buildings

Need space to store garden tools, bicycles, outdoor furniture? Need a little workshop, play space for kids – or a guest house? Then a Walpole Small Building, prefabricated to save you time, fuss and money is for you. Nine sizes and styles to choose from.

Come see them at our 3 display grounds – or write or phone for free illustrated catalog and prices.

OUR 25TH YEAR

WALPOLE WOODWORKERS

Cedar Fences, small buildings, rustic furniture

WALPOLE, MASS. • 767 EAST ST., RTE. 27
Telephone MONTROSE 8-2800

WILMINGTON, MASS. • 234 LOWELL ST.
(RTE. 129) *Telephone* OLIVER 8-4941

EAST LONGMEADOW, MASS.
395 SHAKER RD. • *Tel.* LAUREL 5-3349

GARDEN WALLS •
• ROCK GARDENS

Custom built — designed for lasting beauty with New England field or flat stone — "Exclusive, but not expensive".

For details without obligation call or write

GREENWAY NURSERY

Bay Road North Easton, Mass.

Phone CEdar 8-6690

Send for free samples

PERFECT GARDEN LABEL

Lead pencil markings permanent

Really reliable. Millions in satisfactory use. Beautiful gray green color blends with garden. A style for every purpose.

HOWARD HAMMITT
13 Lewis Street Hartford 3, Conn.

READERS' QUESTIONS ANSWERED

Several plants are called forget-me-nots. Are any perennials that I can grow in my garden?

The true perennial forget-me-not is *Myosotis scorpioides*. It is a lovely, low growing plant, which produces quantities of tiny light blue flowers, if grown in a cool climate with plenty of moisture. Since it increases rapidly, a few plants will cover a wide area soon. They may be divided whenever they become too large.

☆ ☆ ☆

Last year I tried to grow some pentstemon, but they did not do well. Are they difficult?

Pentstemons require a rich, well drained, loamy soil in a sunny location. The addition of well rotted or dried manure helps greatly. The dwarf kinds should be grown in the front of the border or in the rock garden. They may be set out in the spring or early fall. The variety Newberry, a light purplish blue, is especially desirable.

☆ ☆ ☆

Some of our rhododendrons have grown so large they are covering the windows in our living room. Can they be cut back?

With care rhododendrons can be cut back without spoiling their appearance, though they will be sparse for a year or two while new growth is filling in. The cutting should be done at least one foot lower than the height at which you would like to keep them, to allow for new growth. If possible make the cut at a joint or node. Such pruning can be done in early spring or in June after growth has hardened.

☆ ☆ ☆

I have a fringe tree that has lovely white flowers each year, but no fruit. Shouldn't it have fruit?

Fringe tree (*Chionanthus virginicus*) is a choice ornamental that is too little used. The sexes are on separate trees. The male and female fringe-like fragrant flowers are similar, with the former bearing the heavier crop. But only the female tree produces the large blue fruits that add so greatly to its charm in the fall. Trees of both sexes should be planted near together for a heavy crop of fruit.

I read that good soil tilth is necessary for growing vegetables successfully. What is tilth?

Soil tilth, which is cultivation, is as important as soil fertility in vegetable growing. Good soil tilth means a soil thoroughly pulverized and loosened to the depth necessary for root penetration. A friable soil is one that has good tilth.

☆ ☆ ☆

Is soil sterilization important for me? I grow plants only for my own pleasure and food.

Soil sterilization of potting mixtures is a labor saving practice of benefit to anyone who raises plants from seed. It is not necessary to invest in steam sterilization equipment nor to use chemicals, such as methyl bromide. Soil may be sterilized by pouring boiling hot water over it or in the oven of your stove. Use a thermometer and bring the soil to 200 degrees. This will kill fungi, soil insects and weed seeds.

☆ ☆ ☆

Last year the leaves of our willow were eaten by tiny blue bugs. What are they and how can they be stopped?

The adult poplar and willow leaf eater is a metallic blue beetle less than one quarter inch long. Eggs are laid in June with the blackish grubs appearing in two weeks. A second brood usually appears in August. The adult eats holes in the leaf, while the grub devours only the lower epidermis. A spray, using three and one half tablespoons of 50% emulsifiable malathion in five gallons of water, applied the last week in June, will control the pest.

☆ ☆ ☆

Every year my European snowball bush is attacked by insects that curl the leaves and spoil its appearance. Can they be controlled?

The curling of the leaves of the European snowball bush (*Viburnum opulus sterile*) is caused by aphids. When the leaves completely surround the insects, it is difficult to reach them with a spray. To control, use three and one half tablespoons of 50% emulsifiable malathion in five gallons of water and spray when the first leaves are not more than one inch across. Cover all parts of the plant. If the spray is delayed another 10 days, it may be too late.

My neighbor has some attractive flowering quinces, especially a white one, which I have never seen before, and a double pink. Do you know which they are?

The white is probably Nivalis, which bears pure white flowers in profusion. The other may be Falconet Charlot, a double salmon-pink. It is upright in growth with a maximum height of eight feet. Spitfire, a deeper pink, may be the plant you have in mind.

☆ ☆ ☆

At the flower show, I saw a gorgeous display of tree peonies in full bloom. Some of the flowers were 10 inches across. Can you tell me the name of the large double red one?

There is some confusion in the names of tree peonies. One generally known as Reine Elizabeth produces large double salmon-rose blossoms, while Souvenir de Ducher has large, bright reddish-violet blooms. Satan Rouge is a double blood-orange flower, one of the most striking.

☆ ☆ ☆

I am always reading about using leafmold to improve soil. Where can I get some?

Leafmold can be bought in many garden marts and seed stores. Composed of partially decayed leaves and twigs, it may or may not have a high plant food content and for that reason a small amount of a balanced fertilizer should be added. In many places, leafmold can be collected in the woods if fire has not consumed it. It is important as a soil conditioner and for moisture retention.

☆ ☆ ☆

I plan to move in July and want to transfer some plants, especially a lilac bush, some lily-of-the-valley and a few rhododendrons. Can this be done in the heat of summer?

Lily-of-the-valley can be readily moved in July. If clumps have been in one location for a long time, divide them into single crowns. Water all plants thoroughly 24 hours before lifting them if the soil is dry. The lilac is more difficult, but if it is sprayed with a synthetic latex solution before moving, it will survive, though it may not look well for two or three years. Also spray your rhododendrons with the latex to reduce transpiration of moisture from the leaves. Do not set deep and water every five days during August to prevent wilting.

Want healthier, faster-growing transplants every time?

Have more fun—enjoy greater success—in your gardening. Use Transplantone for transplanting tomatoes, peppers, cabbage, strawberries, petunias, snapdragons, roses and many other plants—and also shrubs. You'll find it stimulates the growth of new roots. It also reduces loss of water; so the plant starts growing again in a much shorter time.

TRANSPLANTONE®

The Hormone- **Vitamin Starter**

Trial-size packet 25c
3-oz. canister $1.00

by the makers of world-famous WEEDONE®

AMERICAN CHEMICAL PAINT CO., Agricultural Division

St. Joseph, Mo. • AMBLER, PA. • Niles, Calif.

LILIES

for your garden

THE new lilies are unsurpassed for long season bloom, richness of form and colour. The hardy, vigorous hybrids of today will give you superlative pleasure and performance. Our new catalog, profusely illustrated, in a gold mine of information on the culture, history and garden use of lilies. Excellent for reference, it describes the World's Largest Selection of Hardy Garden Lilies. *Send for Our Free 1958 Colour Catalog!* We Handle All Importation Details for American Customers.

SPECIAL OFFER: 3 beautiful Aurelian Hybrids pastel shades, trumpet to reflexed form, July blooming, quality bulbs sent to you at planting time in autumn, plus our new catalog right away. Cheque or money order. **3 top bulbs for $2.50, 10 for $7.50, postage paid.**

Sandy Best • **GREENOCK FARMS**

Dept. H • GEORGETOWN, ONTARIO, CANADA

THIRTY YEARS' EXPERIENCE

in supplying HIGH CLASS HOLLAND BULBS, the cream of the crop, direct to American Amateur Gardeners, is at your service.

VANZONNEVELD'S famous bulbs, have been assisting that long, in beautifying American Gardens. Catalogs with gorgeous color guide free from

SVEN VANZONNEVELD 3831 TOWNSHIP LINE ROAD COLLEGEVILLE, PENN.

Orlyt means year 'round gardening fun!

You can be happy as a lark enjoying your favorite hobby every day of the year in the comfort of your own climate-controlled greenhouse. You can start seedlings, propagate shrubs, *grow what you please, when you please.* See how really inexpensive a prefabricated, sparkling Aluminum ORLYT can be on our *"Pay as you Grow"* No Money Down, 3-year Pay Plan. Hundreds of models from $365.00.

SEND FOR FREE "ORLYT" CATALOG 52-68

LORD and BURNHAM
IRVINGTON, N.Y.

FOR BETTER GARDENS
MULCH
with MUL-Tex

MUL-Tex, the original non-absorptive buckwheat hull mulch helps three ways—

- RETAINS MOISTURE
- SMOTHERS WEEDS
- REDUCES CULTIVATION

Ideal for flower or vegetable gardens, roses, strawberries, shrubbery. Prevents mud splatter when used around foundation plantings. Provides a rich dark-brown background for flowers and shrubs. Packed in easy-to-handle 50 lb. bags. (200 lbs. covers 260 sq. ft. 1 in. deep.)

Prices F. O. B. Cohocton, N. Y.

200 lbs.	$6.50	1000 lbs.	$25.00
500 lbs.	14.00	2000 lbs.	48.00

Order from ad or write for free folder

LARROWE MILLS, INC.
Box 56 COHOCTON, NEW YORK

IRIS

Come see over 400 of the best and newest varieties in bloom May 22 to June 8th.

Our FREE 36-page color catalog (with Map) will be mailed to to you promptly on request

CHERRY HILL IRIS GARDENS
ROUTE 212, PLEASANT VALLEY, BUCKS CO., PA.

Purple Mullein Tops Them All

HAVE YOU EVER been scared off by the woolly foliage and yellow flowers of the common field and roadside weeds usually associated with the name mullein? Then it's time you discovered the purple mullein (*Verbascum phoeniceum*), a member of the family, but decidedly different.

To my notion, purple mullein is a worthy perennial, outstanding and handsome, with numerous branching flower spikes that attain three feet. Yet the general effect is so willowy and graceful that it makes a perfect accent for the front of the border. Colors, white, rose, pink, lilac, salmon and violet, blend harmoniously with other garden flowers too.

In my garden, this verbascum blooms with the foxgloves and canterbury bells, but continues to send up spikes long after these two biennials are a pleasant memory. Then, during hot, dry summers, it goes completely dormant, but the first rains bring up the attractive rosettes of dark green, rose-veined, textured leaves.

Plants of the mullein family all thrive in full sunlight, except purple mullein, which likes some shade or at least a cool root run. Yet it does splendidly in poor soil, requiring only a light to medium well-drained mixture. Rugged, upright and picturesque, it reproduces freely from seed if soil conditions are satisfactory. It can also be increased by cuttings and division.

When collecting ripe seeds from the bottom of the spike, there will be a few blossoms at the tip so the color can be recorded and kept with the seeds. This makes it easy to select colors for special garden effects.

Plant this verbascum in the fall or early spring, but for bloom the following year, seed should be sown by late July. Even if plants are placed close together, they do not fail to bloom merrily for a long time.

Many interesting hybrids can be produced by crossing *Verbascum phoeniceum* with the Cretan mullein (*V. spinosum*), a close relative native to the Mediterranean area. The latter is more tender, but the hybrids have lovely muted colors, soft amber, dusty rose, grey lavender and delicate buff. Other crosses have been made and several named hybrids are available.

—EDITH MARKLEY
Foster, Ky.

Oxalis That Sleeps

LONG-LASTING and little known is the fish-tail oxalis (*Oxalis ortgiesi*). Characteristic are its compound, green leaves, with wine-red veined undersides, that grow in umbels on a succulent reddish stalk reaching 12 to 18 inches.

The inch-long leaves of this plant, pointed and notched like goldfish tails, and small yellow flower clusters fold up at night and on cloudy days, hence the nickname, "sleeping beauty".

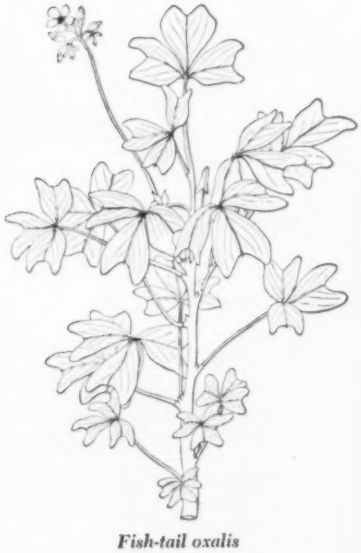
As a youngster, I enjoyed chewing the sour, clover-like leaves of yellow wood-sorrel (*O. corniculata*), a wild member of this family. Familiar, too, was *O. repens*, a creeping herb from Europe that has made itself so much at home in America that it is now a weed to be eradicated rather than admired.

Old conservatories always contained a hanging basket or two filled with

window box oxalis (*O. rubra*), a Brazilian native, with drooping clover-like leaves and small pink, deeply veined, bell-shaped blossoms, reaching toward the light. The white variety, in my house plant collection, is attractive while in bloom, but during its resting period it is placed out of sight under the bench. Because the tubers grow so fast, it is advisable to divide them each year before growth starts.

Bowie oxalis (*O. bowieana*), a South African native, is similar in appearance, but its fleshy, dark green leaves are three times the size and the flowers, nearly two inches across, are rose. Its tuberous roots tend to heave out of the pot more readily than other species. To have bloom in February, repot in early fall, after summer rest.

For best results, place three bulbs in a five-inch pot, just below the surface of the soil. Use a soil mixture containing loam, humus and sand in the proper proportion to make a porous texture. During the growing season, water plants daily and feed with a soluble fertilizer every two weeks.



Fish-tail oxalis

Unlike other kinds, fish-tail oxalis is a slow grower. Since plants do not produce many off-shoots, they can be kept in the same pot for several years. Perhaps this explains why it is not seen more often.

My plant was in flower at Christmas, and after a couple of months rest, new buds appeared. At no time does it flop or die down like its hanging relatives.

—Barbara S. Lownes
Providence, R. I.

Wayside Gardens

Plant Pat. #776

The
Finest New Shrub in 50 Years

A modern and very fragrant version of the ever-popular Snowball. Winner of highest honors at famous Royal Horticultural Show in London. Large, 6" clusters of fragrant white flowers bloom lavishly on graceful 6 ft. plants. In Autumn, this handsome shrub is covered with brilliantly colored foliage. Grows anywhere and is hardy at below zero temperature. Order now—shipment will be made at planting time.

New *Fragrant Snowball* VIBURNUM CARLCEPHALUM

15-18" plants . . each $4.00; 3 for $11.00 • 18-24" plants . . each $5.00; 3 for $14.00

SEND FOR THE WORLD'S FINEST HORTICULTURAL BOOK-CATALOG

Never before has Wayside Gardens been able to present so many splendid, top-notch, new varieties. Over 156 pages of gorgeous, true-color illustrations and listings of the world's newest and best flowering shrubs, prize roses, rare bulbs and hardy "Pedigreed" plants. No other catalog in America offers the wealth of test proven, meritorious new things or such "down-to-earth" garden information. To be sure you get your copy of this outstanding book, enclose $1.00 to cover postage and handling of this heavy book.

84 MENTOR AVE. MENTOR, OHIO

Wayside Gardens

COLOR LILY FOLDER

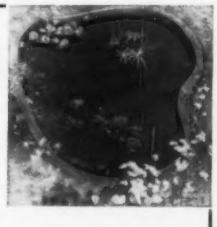
Finest Oregon Grown Lilies

Printed in full color featuring 40 varieties, 19 of which are illustrated. They are hardy, easy to grow and will give you beautiful garden flowers in dazzling colors all summer. Take advantage of our special offers. Send for your FREE copy today.

Walter Marx Gardens

Box 38-H6, Boring, Oregon

The New
GARDEN POOL GLASPOOL



Rugged Fiberglas molded in an attractive free form 4½' long, 3' wide and 15" deep tapering to 4" varies in depth to suit all aquatics. Has built in boxes for plants.

Easily installed — no plumbing — just dig a hole, position pool level, with top of ground. Wide flange top keeps dirt out.

Cost $44.50 — F.O.B. Warren, R. I.

Production Plastics Corp., Box 148, Warren, R. I.

The Finest
FARM LOAM

Free from sod or stones. Cannot be told from screened loam.

For Delivery Call

STILL RIVER LOAM CO.

(Formerly Schofield Farms)

262 Old Connecticut Path
Wayland, Mass.

Call Elmwood 8-2503 or Tuxedo 5-6351

Lily Special $1.00

See in your own garden the absolute perfection of the gorgeous new lilies. For $1.00 we will send you postpaid in **OCTOBER** two flowering size bulbs—one, the famous DeGraaff Olympic Hybrid, the other, his lovely Golden Chalice Hybrid—two truly outstanding fine lilies. Too, we will mail to you at once, **at no extra cost,** a copy of the new 1958 catalog (see below).

THE WORLD'S FINEST LILY CATALOG

48 pages profusely illustrated in color, over 200 fascinating varieties of lilies, many new for '58, also twelve kinds of Hardy Cyclamen and special lily food. Truly, it's a cultural handbook, invaluable to every real gardener. **To obtain the catalog ONLY,** please be sure to send 25c coin or stamps.

FREE **EARLY ORDER BONUS**

For **EARLY ORDERS,** sent in **AT ONCE** for the above $1.00 special, we will also mail you, absolutely **FREE,** one bulb of DeGraaff's lovely new lemon-yellow lily, Prosperity. This is one of the finest of his Mid-Century Hybrids, cataloged at well over $1.00 each. We send it postpaid to all who order the $1.00 Special **NOW.**

ROMAINE B. WARE—*Lilies* Box H Canby, Oregon
Specialist since 1927

For the enclosed .00, please mail me in October, the above descr. lily bulbs, including the FREE bulb of Prosperity. And send the 1958 catalog at once.

Name.....

Address.....

HAPPY BIRTHDAY

This PARTY PACK has everything for a HAPPY BIRTHDAY PARTY for your CHILD. It is suitable for children of all ages. It will serve 6 guests. PACK consists of 99 Colorful Items of the following: 1 Fancy Decorated Happy Birthday Tablecloth size 58 x 88; 1 Delightful Game for the entire party; 1 Box of Candles for the Birthday Cake.
AND 8 of each of the following items; Plates, Drinking Cups with Handles, Napkins, Spoons, Forks, Candy or Nut Baskets, Fancy Party Hats, Beautiful Party Prizes, Candle Holders, Large Colorful Balloons, Party Invitations, Cards and Envelopes.
EVERYTHING to make your CHILD'S BIRTHDAY PARTY the HAPPIEST DAY of the YEAR. 99 Colorful Items ALL IN ONE LARGE BOX.
A $6.00 VALUE — SPECIAL $4.25 — Post Prepaid — No C.O.D. Please. Cash, Check or Money Order. You will be delighted or your money back.
THE HAPPY BIRTHDAY PARTY PACK
5139 North Clark Street, Dept A-177, Chicago 40, Illinois

HYPONeX
SOLUBLE PLANT FOOD COMPLETE
Grows Better Plants in Soil, Sand or Water
Simply dissolve and water all your house plants, garden flowers, vegetables, shrubs and lawn. Feeds instantly. If dealer can't supply send $1 for 1 lb. Makes 100 Gals.
Guaranteed by Good Housekeeping
HYDROPONIC CHEM. CO., Copley, Ohio, U.S.A.

TREE WORK
PRUNING REMOVAL
BIG TREE MOVING
Satisfactory work at a reasonable cost
WHITE & FRANKE, INC.
AS 7-4204-4205 Brookline, Mass.

Showy Euphorbia

Euphorbia wulfeni

IN DALMATIA grows *Euphorbia wulfeni,* a handsome cousin of the well known poinsettia. A hardy sub-shrub, it has two attractive features, blue-green foliage and yellow-green flowers.

All stems develop from the base of the plant and are thickly covered, along the upper half, with narrow blue-gray leaves. Each stem is topped in the spring with a broad, compact cluster of blossoms, sometimes as much as eight inches long and three wide, which last for two months or more. As in poinsettia, the showy "flower" is not composed of petals but colored bracts.

This spurge does especially well near the sea where the soil is light and the air moist. Under ideal conditions, it will become a large glaucous plant, six feet tall and four or five through, though usually it remains about half that size. *Euphorbia wulfeni* is easily propagated from cuttings and by division. Self-sown seedlings occasionally come up around the parent.

—DOUGLAS ELLIOTT
New Plymouth
New Zealand

What Earthworms Do To Garden Soils

HAYDN S. PEARSON, Greenfield, New Hampshire

I AM A GREAT booster for earthworms in my 40,400 square feet of garden plots. But not for the reason you think! Earthworms do not mean much in terms of gardening results. To be sure, their tunnels help to aerate the soil and to provide channels for water.

I should emphasize that I am not an organic gardener. I use large amounts of commercial fertilizers provided there is a generous amount of humus in the soil.

The reason I am a booster for earthworms is that their presence indicates good soil—and good soil is the basis of successful gardening. You may think earthworm castings enrich the soil! Here is a statement from the 1957 U. S. Yearbook of Agriculture, "Soils". "The organic residues ejected by earthworms are poorer in nutrients than the original residues ingested."

Under favorable conditions, I think that earthworms are the most important animal life in the soil. I have read that in a good soil they may number several million to the acre and that their total weight per acre may reach half a ton.

I also believe that earthworms are important in mixing the humus material in the soil by taking it into their systems and ejecting castings. Some species of worms eject the castings on top of the soil while others leave them below the surface.

Quantities of mulching material, especially old hay, although I also experiment with sawdust, peatmoss, shredded sugar cane, pine needles, baled shavings, oat straw and paper, are used. If the soil is well supplied with humus, the increase of earthworms under a mulch is remarkable.

My favorite mulch for general use is old hay or dried grass clippings. Several of the garden plots have been under mulch for five years and the earthworms have increased tremendously.

Large quantities of hen-pen litter, that have been weathered outdoors for at least two years, are also used. Whenever this material is worked into the soil, earthworms have increased. I have also used sizable amounts of dried manures, including hen, cow and sheep, and have had good results. However, when a humus-filled soil has been well mulched with old hay, the results have been best.

I have run a dozen and one experiments with commercial fertilizers, up to 10 pounds per 100 square feet, and I cannot see that the fertilizer has any harmful effects at all. In fact, large amounts of humus plus large amounts of commercial fertilizer plus mulching, have given the largest counts.

To sum up, earthworms have no noticeable effect on crops or flower production if the soil is well-supplied with humus and is generously fertilized. The essential basis of gardening is a soil of spongy, friable texture plus necessary plant nutrients.

The earthworms do some good by aerating the soil through their tunnels. But as gardeners we should know that earthworms are a sign of good soil fertility and not the cause of it.

Choice Shrubs for Rock Gardens

AMONG THE CHOICER broad-leaved evergreens for the rock garden, few have greater charm than *Andromeda polifolia.* An ericaceous plant of the far north, it produces a profusion of dainty, bell-like flowers from terminal buds.

The leaves, one and one half inches long, narrow, leathery and deep green, are glaucous above, with a whitish pubescence beneath. The plant grows 10 to 15 inches tall, with a greater spread, and nestles close to the soil.

A recent introduction is *A. p. compacta,* shown here. One form of this is designated *A. p. nana,* but the variation from *A. p. compacta* is so slight, it is scarcely apparent. *A. p. compacta* is a tight growing plant, not more than eight inches tall, which in May and early June is laden with a profusion of deep pink bell-like flowers. The leaves, smaller than in the species, are equally glaucous and attractive.

The *A. p. compacta* form, native to boggy areas in northeast Asia, is ideal for the rock garden if the soil is peaty, acid and well drained. It does not tolerate lime. In northern gardens provide sun, but farther south dappled shade is needed.

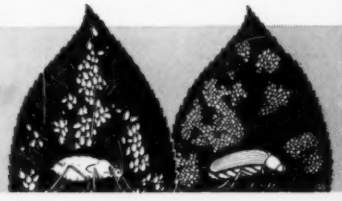
GROSSMAN

Andromeda polifolia nana compacta is a choice miniature evergreen.

are **BUGS**
eating you out of plants and blooms?

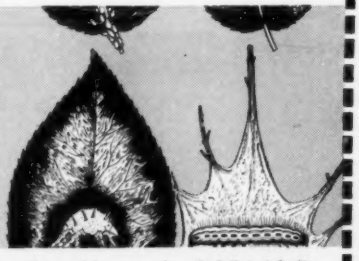
Look at your leaves for danger signs

Then apply ISOTOX Garden Spray, containing Lindane, Malathion and DDD. This time-saving spray controls more than 43 kinds of destructive garden insects!



Hardened buds... distorted leaves? Check for aphis.

Chewed-up leaves may be clues to Japanese Beetles.



Silvered leaves usually mean red spider mites.

Defoliated fruit trees may mean caterpillar damage.

It's easy as watering
to apply versatile ISOTOX Garden Spray with the ORTHO Spray-Ette, garden hose attachment.

ORTHO®

California Spray-Chemical Corp.
A Subsidiary of California Chemical Company
Richmond, Calif., Washington, D.C.
T. M.'S REG. U. S. PAT. OFF.: ISOTOX, ORTHOCIDE

JEANNETTE GROSSMAN

Magnolia That Blooms in the Summertime

FOR THE MOST PART, gardeners are familiar with the magnolias that bloom early in the spring. Certainly this can be said of the showy saucer magnolia and its many variations in pink, lavender and white. The earlier flowering star magnolia, in white or pink, is also a familiar favorite, but known, too, are the anise, Yulan and kobus magnolias. Yet other kinds flower during the summer months, and among them is the lovely Oyama magnolia (*Magnolia sieboldi*) we see illustrated here. A small tree growing 30 feet high, two to six inch long leaves are enlived in June and July with four to five inch, fragrant white blooms that are noted for their scarlet red stamens that lend a dramatic air to this Japanese member of the clan. Not as hardy as the saucer magnolia, the Oyama magnolia can be grown along the West Coast and from New York southward where it can be depended on to perform at a time when most flowering trees and shrubs are silent.

What does Atomic Radiation do to plants?

Plant scientists now working with atomic radiation have found that atomic energy has brought several helpful techniques to horticulture, notably in plant breeding, food preservation, growth and nutrition

H. B. TUKEY, JR., *Michigan State University*

UNFORTUNATELY, man discovered atomic energy through the horrors of the atomic bomb, which is similar to discovering electricity by the electric chair. However, atomic energy has been developed for peacetime uses, which already have far-reaching effects for the plant scientist and home gardener alike.

The atomic age has served to intensify interest in the use of radiation in plant breeding. Plants give rise to new forms, called mutations or sports, naturally and spontaneously. Exposure to x-rays will cause an increase in the mutation rate of plants, thus producing more variations in a shorter time.

At the Brookhaven National Laboratory on Long Island a 10-acre field has been set aside to test the effects of radiation. The source of radiation is a radioactive isotope of the metal cobalt (cobalt^{60}) which emits rays similar to x-rays. The plants to be irradiated are arranged in concentric circles around the radioactive cobalt.

Using this cobalt field, scientists have found many effects including plant mutations, most of which are undesirable. However, a program has been initiated to process the few promising ones by continued breeding.

An outstanding example of the value of radiation in breeding is furnished in the navy bean. Scientists at Michigan State University irradiated seed of the variety Michelite. Of the several mutations, one was selected and used in many crosses, resulting in a new variety called Sanilac, now an important variety in the industry.

Other examples of new varieties by irradiation of seeds and plants include the development of cereal grains in Sweden, the introduction of a promising peanut variety in the south, experiments with oats and barley in the north and a new chrysanthemum from Brookhaven National Laboratory.

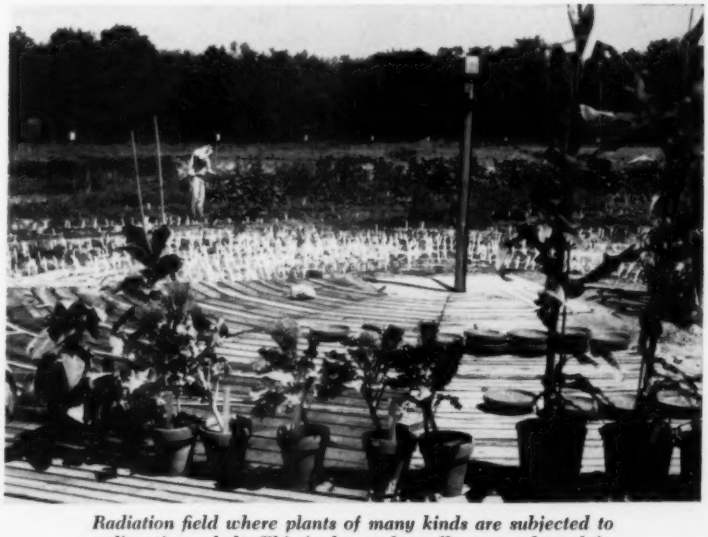
The genes controlling disease resistance are susceptible to radiation. This is particularly fortunate, because disease organisms, like plants, can mutate and give rise to new strains. With radiation, the plant breeder has a greater opportunity for producing disease-resistant forms of the American elm, American chestnut and other species ravaged by disease.

Breeding will continue for new varieties suitable for a particular area or climate, a certain market or for their adaptability for machine harvesting, processing and storage. Thus irradiation will speed up the slow work of the plant breeder.

Considerable attention has been focused on radiation as a method of food preservation. Already cereals, meats, milk and canned products of all kinds have been irradiated with x-rays. This has rendered them sterile of bacteria and other micro-organisms, thus increasing the storage life of the products. However, radiation also affects the enzyme systems responsible for flavors and colors of the foods, making many of them unpalatable, unattractive or otherwise unacceptable to the consuming public.

In contrast, radiation of fresh peaches has controlled the brown rot fungus successfully, without damaging the fruit or changing its flavor. Radiation will never completely replace

See page 329



Radiation field where plants of many kinds are subjected to radioactive cobalt. This is done when all persons have left.

With Floribundas You Can Enjoy Bloom

From May Till Frost

JOHN R. PATTERSON
President, American Rose Society

IN RECENT years floribunda roses have gained greatly in popularity—and justly so.

A cross between hybrid tea and polyantha, the floribunda has the hardiness of the latter, with the florescence of the former. Most floribunda blossoms are borne in clusters, but many of the individual flowers are equal to hybrid teas in form and texture.

Because of the extensive work of hybridizers, roses in this group are available in nearly all colors except blue, while in substance and size they are greatly superior to their polyantha parent.

Floribundas are not difficult to grow if given deep, well drained soil, well supplied with humus and plant food. When planting floribundas, dig a hole twice the diameter of the root spread, filling a little at a time, puddling the fill to settle the soil and to drive out pocketed air.

When the planting job is completed, the scion bud should be three to four inches below the soil surface. No harm will be done by such deep planting, if the soil is light. More important is the expectation that roots will develop on the scion, thus putting the plant on its own roots and doing away with the possibility that growth from the stock will sap strength from the floribunda scion.

Floribunda White Bouquet

Floribundas can be massed along the foundation of the house.

Floribunda roses may be purchased at this time in cans or other containers or in the early spring or late fall with their bare roots wrapped in a moisture holding material to prevent drying. After planting, remove all flowers to help the plant become established.

Generally hardy even in colder parts of the country, floribundas come through the winter well if soil is hilled over the crown of the plant in December. In warmer areas, such hilling is not necessary, though some gardeners use salt hay or other material which does not mat to give slight protection from sun and ice.

Remove the soil slowly in the spring and cut out all dead and twiggy wood. Long branches may be cut back slightly, but heavy pruning is not recommended. Since roses are heavy feeders, a small amount of a rose fertilizer or soluble plant food should be applied once a month until August.

Floribundas may be grown in partial shade, though they blossom more freely and remain more healthy if they are in full sun. Far less susceptible to black spot than hybrid teas, floribundas do not require weekly sprays or dusts, though periodic examination of the plants, especially the leaves, is advisable. If there is evidence of black spot, a spray or dust of ferbam or captan will bring it under control. Weekly deep waterings are necessary during droughts or periods of low rain fall.

Some floribundas fit especially well into the perennial border. One such is China Doll, that grows less than two feet and produces masses of sprightly pink blossoms. Considered by many the choicest of all floribundas, Golden Fleece has dazzling canary yellow blooms equal in size to the larger hybrid teas. Clusters of 20 four-inch blooms are not uncommon. Plants of Gold Cup, another comparatively new golden yellow, are small, but the flowers are large.

Betty Prior Floribunda →

See page 340

Cosmos Dazzler

With Annuals You Can . . .

Start a Garden Now

OLIVE E. ALLEN, Norwalk, Connecticut

IF YOU WANT a quick color effect in your garden this season, you can achieve it by planting annuals now.

Those who have moved to a new neighborhood recently or were compelled to postpone spring planting, as well as those who are moving to a summer vacation house this month, can rely on annuals for flowers this summer.

The best and quickest results come from young plants or seedlings that are available in trays or flats. Some gardeners have been raising their own plants, but others can purchase what they want from local garden centers, nurserymen or florists. At this time they will be in flower or getting ready to bloom.

There was a time when the supply of good annuals was depleted by early June, but in recent years, in most parts of the country, a wide selection of worthwhile plants is generally obtainable for another month. The wise professional grower purposely starts some of his seeds late in order to have a steady supply of seedlings for both early and late planting.

Gardeners who desire an immediate display of color in June can purchase plants in pots or bands. These will have some fully open flowers and may be transplanted into the garden, in window or planter boxes without disturbing the root system or halting flowering.

Many plant marts carry new varieties of many kinds of annuals, such as petunias, verbenas, ageratum, Unwin hybrid dahlias, dwarf annual phlox, red and blue salvias, French marigolds and sweet alyssum. With only these, a colorful and generous display is possible from June until frost.

Perhaps the one annual that will give more pleasure than any other all summer long is the petunia. Newer kinds are a far cry from the small magenta colored flower of not so many years ago. Today, multiflora, grandiflora, frilled and double petunias come in all shades of pink, rose, salmon and red, plus blue, purple, white, as well as bi-colors.

Many of the new F_1 hybrid varieties develop into plants that reach 18 to 24 inches across and remain uniform in height at maturity. Furthermore, these F_1 hybrids are so vigorous and free flowering that only a few are needed to make a spectacular showing.

Salmon pink petunia Linda, an F_1 hybrid, is outstanding in a flower bed or along a walk lined with dwarf blue ageratum, such as Blue Mink. The new Blue Lustre petunia, combined with bright yellow dwarf marigold Butterball, is another striking combination to consider.

Even when purchasing as late as June, it pays to search for new varieties of annuals. An F_1 hybrid of any flower is synonymous with continued and abundant bloom all summer long. Similarly, the new F_2 hybrid snapdragon, Panorama, flowered spectacularly all last summer in my garden in spite of drought. Other modern hybrids, such as Blue Mink ageratum and Trysomic stock, have been bred for better bloom and other desirable characteristics.

When transplanting annual seedlings, a dark, drizzly day is ideal, but in any case avoid the middle of a hot, sunny June day, unless adequate shading can be provided until the young plants can become established. Watering when transplanting, and for a few days afterward, is essential.

See page 339

Annuals can be massed for dramatic effects.

NO MATTER WHERE YOU LIVE YOU CAN

Grow Flowers in Window Boxes!

LOUISE BUSH-BROWN, *Ambler, Pennsylvania*

WRITING in the first century A. D. Pliny, the Elder, made mention of the "mimic gardens" in the windows in Rome which "day after day presented the reflex of the country to the eye".

It is probable that this was the earliest reference to window boxes. Even in the days of ancient Rome there was a longing in the hearts of those who lived in the city to have a touch of bloom and beauty, though no more than a "mimic garden" at their windows.

This same longing finds expression throughout Europe today, for window boxes are used in gay profusion everywhere, contributing their special charm to the picturesque quality of many a city square, town and village. To the American traveler they are an inspiration and delight.

Window boxes and tubbed hydrangeas add to the charm of this dwelling.

One sees them at the windows of homes and inns, banks and office buildings, on stores and in market places and in courtyards of the great chateaux. Even a tiny window in the steep gable roof of a hospital will have its window box. Within recent years there has been upsurge of interest in window boxes in America and many city, suburban and country homes are made gay with attractively planted window boxes.

One of the happiest aspects of gardening is the joy of sharing. Few other forms of gardening offer such possibilities for sharing beauty as does the window box. Not only does it bring delight to its owner, but it also gives a lift to the hearts of friends, neighbors and to all who pass.

Many plants are suitable for window box use and with artistic skill it is possible to achieve charm and distinction even when planting only a small area. The flower boxes in the inner court of the Chateau de Chillon in Switzerland are an outstanding example of such a planting.

Among the satisfactory plants for window boxes in a sunny exposure are geraniums, always gay and colorful, petunias, particularly some of the newer hybrids, such as Ballerina, La Paloma, Red Satin, Linda and Maytime, which generously bloom throughout the season, and lantana, heat resistant and willing to bloom blithely even under adverse conditions.

Lantanas are now obtainable in shades of pink touched with lavender and gold, as well as the more familiar yellow and orange tones. Other plants include dwarf annual phlox in attractive new shades, lobelia, with Sutton's Cambridge Blue one of the best varieties, sweet alyssum, both Royal Carpet and the new tetraploid giant Snow-

In this issue of HORTICULTURE, we take pleasure in presenting to our readers three articles on growing plants in containers.

Our cover features a window box of contrasting red geraniums and double white petunias and to go with it is the story, on these pages, on how to make and plant window boxes.

The following two pages contain an article on how to make and plant hanging baskets and another on growing fuchsias in pots to tie in with the color illustration on our back cover, which shows a handsome specimen in a large tub.

Today, gardening in containers is enjoying increasing popularity all over the country. Not only can picturesque effects be achieved, but it can actually be started almost any time. And this month is ideal for gardeners in all sections of the country to make a beginning. —EDITORS

drift, which will remain in bloom until late in the autumn, and torenia, the quaint little wishbone flower.

In addition, many plants are well suited for window boxes in partially shaded locations or on the north side of a house. Impatiens, now obtainable in enchanting new shades of pink, lavender, mauve and purple, will give abundant bloom over a period of many months. Wax begonias invariably do well, as do coleus, with emphasis on the Rainbow Strain for its soft, luminous hues.

Of spectacular appeal in partially shaded boxes are tuberous begonias, with their handsome foliage and enchantingly striking flowers. The rose and camellia-flowered forms may be used, as well as the hanging and multiflora types.

There are also many trailing plants and vines for window box use. Among them are the popular large-leaved vinca (*Vinca major variegata*), the lovely Sunset ivy geranium and ivies in great variety.

If one has facilities for growing plants in coldframes, in nursery plots or in a greenhouse, or if expense does not have to be considered, it is possible to have a succession of plantings in order to keep window boxes bright with bloom from early spring until late in the autumn.

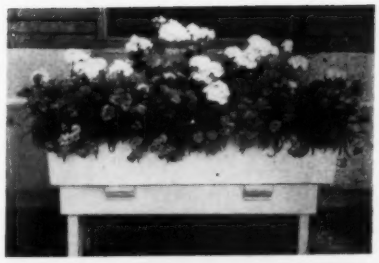
For early bloom, pansies, violas, English daisies, golden alyssum (*Alyssum saxatile*) variety Silver Queen, sweet william phlox (*Phlox divaricata*) and English wallflowers make good companions for pots of spring bulbs, such as Spanish squill (*Scilla hispanica*), muscari, the species waterlily tulip (*Tulipa kaufmanniana*), and the small, dainty flowered narcissi and jonquils.

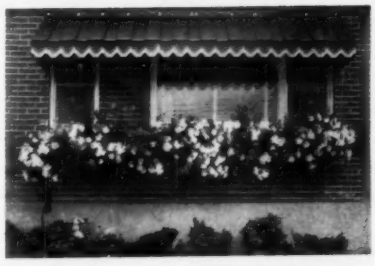
Follow this spring planting with petunias, geraniums, begonias, fuchsias and other summer-flowering annuals and pot plants. Later a few gay pots of colchicums and autumn crocus will add color and interest, while chrysanthemums may be used for late season blooms in October.

While the selection of plants for harmonious effects requires artistic skill, there are practical matters which must be taken into consideration if one wishes to achieve success with window boxes. The type of box used, the soil mixture and the program of general maintenance are all important factors.

Window boxes made of wood are, on the whole, the most satisfactory, provided a suitable wood is selected and the box is constructed with care. Cypress and redwood are superior to others as they are resistant to decay and will last for years. Cedar is also excellent, while a good grade of white pine will give satisfactory results.

A fairly heavy grade of lumber, varying from 7/8 of an inch to one and one-quarter inches should be used. The width of the average box should be from nine to 10 inches, and the depth approximately eight inches, with the length depending upon the location.





Geraniums with dwarf pinks
Petunias all by themselves
Luxurious fuchsias in shade
Many kinds of coleus plants

When assembling, use screws instead of nails, and angle irons on the inside to reinforce the corners near the top. Metal boxes, especially those made of thin metal, are seldom satisfactory. Metal is a conductor of heat and when boxes of this type are placed in a sunny exposure the soil becomes so overheated that plants cannot thrive. The soil also dries out very rapidly so watering becomes a problem.

Regardless of the type of box, it is important to provide adequate drain-

See page 350

Planning on MAKING HANGING BASKETS? Here's How!

C. ROY BOUTARD, *Berkshire Garden Center, Stockbridge, Massachusetts*

ALONG WITH GROWING plants in window boxes, in tubs and in other containers, growing ivy-leaved geraniums, lantanas, fuchsias and other plants in hanging baskets is another form of gardening that is finding more and more use in our gardens of today.

Though few gardeners realize it, most of the plants used in hanging baskets do not, in their native habitat, hang at all. Rather they are found trailing over rocks, anchoring themselves with extra rootlets into tiny little rock crevices, sucking out all the moisture they can, or twisting through the woodland floor, sending bundles of roots from their stems into the cool, damp soil.

These plants, when transplanted into a hanging basket in a dry climate, cannot be expected to flourish, unless they are given special need and care.

Grown in this manner, plants are unable to obtain additional water and nourishment through their adventitious roots. Instead, both food and moisture must come from a small ball of earth,

This is how a hanging basket is made and planted. Tray below catches water.

and since plants are exposed to drafts, evaporation is much more rapid.

For this reason, soil used in the hanging baskets must be water retentive, as well as rich in nourishment. One of the best materials for this purpose is sphagnum moss, which is first soaked in a weak fertilizer solution. It may take two or three days to saturate moss that is very dry, but it is important to wet every particle.

After the sphagnum moss has been soaked, mix it with two-thirds good rich garden loam. To each bushel add one cupful of bonemeal and one handful of dehydrated cow manure, which is easily available and clean.

Wire baskets with openings not wider than one inch are among the cheaper and lighter containers to handle, though their only drawback is that they are unattractive until the plants cover them over. Line the wire baskets with the moss you can scrape off stones or collect from the woods to hold the soil mixture, but leave a shallow impression on the top for watering.

If lobelia, strawberry geranium, periwinkle, wandering Jew or similar plants are to be set laterally through the sides, fill only the lower part of the basket with moss and soil, then carefully pull the tops of the plants through the wires from the outside, filling with moss and soil as you work upward.

It is important to set the plants firmly, and when finished soak everything by dipping the basket into a bucket. Even when plants are only placed in the center of the basket, it is better to use several small specimens rather than one large one in order to achieve an all-round effect.

When a basket is well-prepared, no additional feeding is necessary during the first five or six weeks, but after that, weekly applications will keep the plants healthy and fresh. A weak dose each week is better than a strong one every three weeks, which may burn the roots.

See page 347

Hanging baskets are used to decorate streets in Victoria, B. C.

PLANNING ON *growing* *Fuchsias* *in pots?*

HERE'S HOW!

MARK MACDOUGALL, *San Leandro, California*

A SHAPELY potted fuchsia plant in full bloom is a joy to behold, as well as a source of gratification to its owner. Few other plants give as much satisfaction and pleasure from such relatively simple requirements as the "little dancing ladies".

Remember, however, that any potted plant is more exacting in its needs and surroundings than those growing in open ground, primarily because of confinement of its root system. Nevertheless, with a little care, fuchsias adapt themselves to pot culture. Growing them in pots offers many advantages. For one thing, they are portable and may be moved about at will, while those past their prime may be replaced by others coming into bloom.

Potted fuchsias are especially suitable for home gardeners living in extreme climates. They may be moved about for sun or shade and in the winter may be brought indoors. Then, too, if you have a greenhouse or glassed-in porch, fuchsias may be kept in bloom the greater part of the year.

Plants can be grown to perfection in a properly constructed lathhouse, protected from strong winds. They may also be successfully grown on porches, balconies, covered terraces, patios, under shaded trellises and arbors or in the shade of high-branching trees.

For the most part, they thrive best in the shady part of the garden where the air is fairly moist. The exposure should be comparatively warm and free from killing frosts. Ample light is also needed for good growth.

Filtered light throughout the day, under lath or other covering, is best. Morning light, avoiding the burning heat of mid-day and afternoon, serves about as well. Only trial and experience will tell how much sun the plants will stand. Fuchsias grow well along the seashore where they enjoy the coolness and humidity of the ocean breezes.

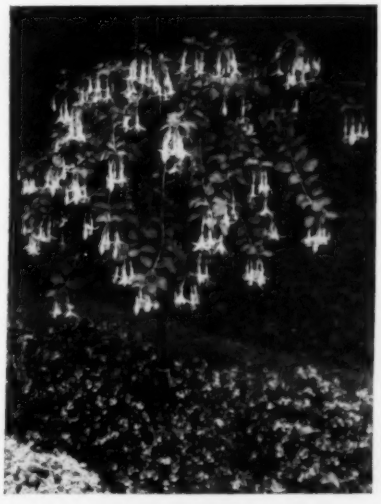
Like other plants, fuchsias will adapt themselves to their environment if it is at all congenial. The ease with which they are propagated, their lush growth with proper care and their rewarding wealth of colorful blooms are qualities that make them the flower-lover's favorite throughout the world.

Many fuchsia varieties are rangy, rapid growers and are more suited for garden planting. The low, bushy varieties are more satisfactory for pot culture. Less vigorous, they may be controlled by pinching and shaped into ideal pot plants. The small, compact, bushy growers are often the most prolific bloomers.

Potted fuchsias are usually divided in three groups, the bush or ball shape

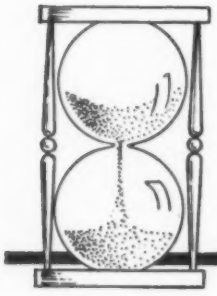
See page 348

Fuchsia can be easily trained into a standard or tree form. Such a plant will live on for many years if given good care.



GENEREUX

Fuchsias massed with other pot plants make a colorful picture.



NOW IS THE TIME

JUNE, THE MONTH of flowers, balmy days and pesky bugs, is upon us. While drinking in the beauty of fresh new greenery, we should keep one eye cocked for the bugs and blights that may beset our gardens if we permit.

Start Control Sprays

Fire blight shows up on pear in June. Wilted or brown-black leaves on shrivelled new growth is the usual evidence of this bacterial trouble. Both streptomycin, an anti-biotic, and zineb are recommended for control.

Annual phlox will flower in a few weeks if seed is sown this month. Plants do best in full sunshine.

Plant Perennial Seeds

Seeds of biennials and perennials should be planted late this month or early in July. Prepare the seed bed well and incorporate humus. If this is done, the seedlings will grow rapidly and develop a strong root system. They should be ready for planting in the garden by early September, if you want to have ample bloom next year.

Attend to Shrubs

Pruning of early blooming shrubs should now be completed. At the same time, broadcast fertilizer and humus around each shrub to restore the plant food content of the soil. During dry periods, soak the soil deeply.

Check Lawn Weeds

If you have not applied a pre-emergence weed control spray, now is the time to make an application of 2,4-D to kill such broad-leaved weeds as buckhorn plantain, plantain, dandelion, ground ivy and creeping charlie. Follow the directions on the container for dilution and optimum weather conditions for best results. Use special equipment to avoid contamination of the insecticide sprayer.

Leaves Absorb Food

Foliar feeding is now accepted as a wise method of supplementing soil feeding. Frequent applications of a weak solution are more efficacious than infrequent large doses. Both the flower bed and vegetable garden will be benefited. Use any of the standard fertilizer combinations.

Control Scale Now

Late June is the time to control several of the scale insects with malathion. Use four tablespoons of the 50% emulsifiable in five gallons of water. Bagworm control is advised during the first week in June, applying 10 tablespoons of arsenate of lead in five gallons of water. For powdery mildew, sulfur or karathane is recommended.

Wipe out Black Spot

Spraying or dusting for blackspot of roses should be started. Early prevention is so much simpler than attempted eradication once the disease is well established. Both captan and ferbam are good, with the former the stronger and more able to burn out young infections. Typical evidence of the trouble is the fringe edged black spots on the leaf.

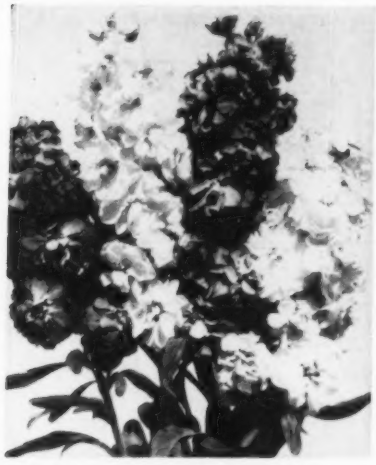
Trip the Thrips

If gladiolus corms have been dusted for thrips, there will be less need for early spraying of the foliage with DDT. Successive plantings should be made, choosing varieties that come into bloom early for the late plantings. New corms can also be planted now for later bloom.

Control the Beetles

This is the month for Japanese beetle, Asiatic garden beetle, June bug and rose chafer. Fortunately with some of

Keep removing faded flowers from petunias to enjoy continued bloom Also pinch plants to keep compact.



Stock is one of the most fragrant annuals to grow for summer bloom. It is noted for its sweet scent.

the newer insecticides, the problem of control is not so great. Dieldrin and malathion are among the effective chemicals that may be used. The garden beetle is the slyest of the group, feeding at night and hiding during daylight. If the foliage of flowers or vegetables shows small holes, you may suspect the garden beetle is the culprit.

Keep Birches Healthy

If you missed the first control spray for the birch leaf miner, get ready to apply the second one in early July. Use malathion or lindane, and time the spray carefully to eradicate the pest. Cover the foliage thoroughly.

Use Some Mulch

Whether the mulch you use is organic or plastic, it should be on now to hold moisture, conserve plant food and keep the soil in a friable condition. The depth of the mulch will depend upon the material used.

Water When Necessary

Despite the more than ample rain and snow many sections received during the past winter and early spring, watering will be necessary during hot weather. Delay watering the lawn to encourage deep rooting but not long enough to cause browning of the grass blades. In watering recently planted trees and shrubs, allow the hose to remain in one place until moisture has penetrated at least six inches.

On Crown Layering

Many shrubs can be crown layered by hilling soil over the stems to a depth of six inches. By notching the stem before hilling, roots will develop soon. Additional root stimulation is given by using a root inducing hormone. Daphne, hydrangea, yew, juniper, forsythia and others whose stems originate in a compact group, can be rooted in this manner.

Start New Plants

Many plants such as anemone, echinops and phlox, can be increased now by taking small sections of roots and setting them in sandy soil. Stem cuttings may be made now also and when stuck in sand, root quickly. Fuchsias, coleus, lantanas and heliotropes are among those easily rooted at this time.

Head Off Cutworms

Get the jump on cutworms by dusting with chlordane around each transplant as soon as it is set. If a heavy rain occurs, a second application may be necessary to keep them under control. Cabbage plants and other brassicas, egg plants, peppers, cucumbers and melons are preferred food of these night feeding, dun colored, smooth caterpillars.

Stake Tomato Plants

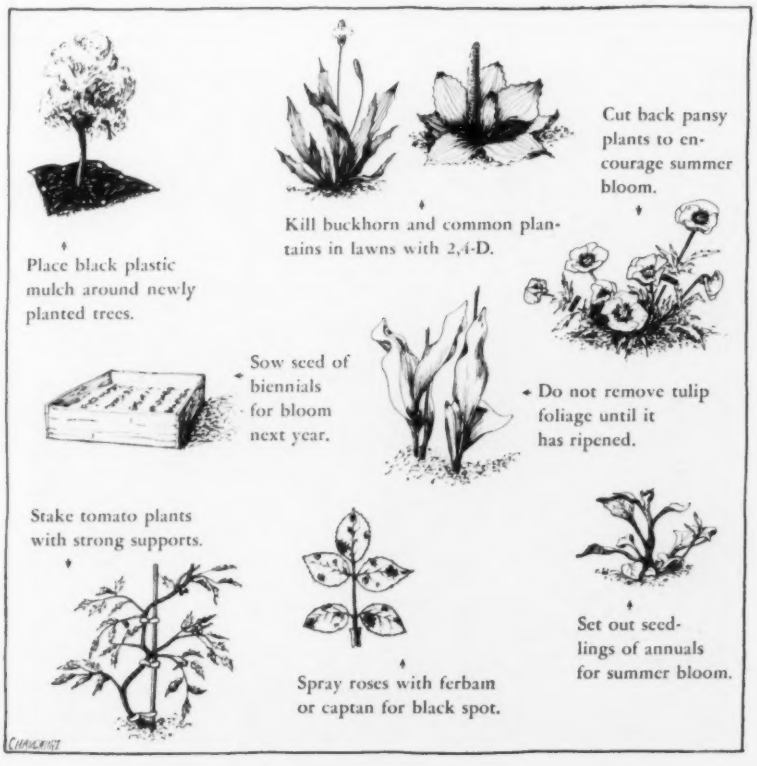
If you are not using black polyethylene as a garden cover to prevent tomatoes from lying on the soil, it is wise to stake the plants and remove the suckers. Properly staked, each plant will bear a heavy crop of clean, disease free fruits. Now is the time to give your house plants a vacation by removing them to the garden or porch where they may revive from months of being cooped up indoors.

Some Tender Shrubs

Crepe myrtle, heavenly bamboo (*Nandina domestica*), chaste-tree, bluebeard (*Caryopteris incana*), butterfly bush and other flowering shrubs of southern gardens are root hardy in the north, if treated as herbaceous perennials. Cut them back now to the ground if you want them to remain low and shrubby, but if you prefer them taller, wait until new shoots appear so you can eliminate dead growth primarily.

Check On Chlorosis

Although chlorosis appears in the spring, it can be corrected now by using chelating compounds according to directions. Available in most seed stores and garden marts, their use has proved of value in overcoming iron deficiency. Chlorosis can be detected when leaves turn yellow between the green veins. Plants in that condition are susceptible to attacks from insect pests and diseases of many kinds. By checking chlorosis now, plant growth will not be retarded.



Summer Care of LAWNS

Whether you live where summers are hot or cool, the *summer* care you give your lawn will determine how it will look at all times of the year.

JESSIE DE FRANCE and J. R. KOLLETT, *University of Rhode Island*

WITH THE ADVENT of warm spring days most home-owners and week-end gardeners can hardly wait to get out-of-doors and work around their lawns and gardens.

But the lure of the beach, the golf course or a good fishing spot soon dampens enthusiasm, so lawn work is soon forgotten until autumn or the following spring except, perhaps, for an occasional mowing. Such neglect of the lawn during the warm summer months often leads to unhappy problems, for a good lawn must have proper and adequate care during the summer.

Many factors affect the beauty and desirability of a lawn. Among these are the amount of water it receives, naturally or artificially, surface compaction and drainage, frequency and height of mowing, the fertility level of the soil and the incidence of weeds, insects and disease. Under normal soil conditions, a good lawn can be established and maintained in most sections of the United States if consideration is given to the kind of grass used, proper construction and suitable management practices.

If necessary spring maintenance, such as cleaning up the lawn, rolling, ample fertilizing, applying lime and reseeding if necessary, were all carried out, the amount of care the lawn requires in the summer will be greatly reduced. With these lawn management practices carried out in the springtime, summer maintenance will consist primarily of mowing, though watering, fertilizing and possibly crabgrass control may be necessary.

Most lawn problems can be eliminated with proper mowing and feeding with a high nitrogen fertilizer to encourage healthy turf and discourage clover and weed infestation. Chemical weed killers may be necessary to ensure complete eradication of weeds.

If so, remember that chemicals will be more effective with good lawn management than where chemicals are relied upon to do the job alone. The best defenses against the invasion of weeds is a vigorously growing well-fed lawn.

You, too, can have a lawn like this if you give it the care it needs.

Regular and systematic mowing of the lawn during the summer months is an operation which must not be neglected. The height at which the lawn should be cut is dependent upon several factors, such as kind of grasses used in the mixture, climatic conditions and the purpose for which the lawn is to be used. For example, Merion bluegrass, which is an improved selection of Kentucky bluegrass, will stand a height-of-cut considerably less than will ordinary Kentucky bluegrass.

Usually a dense, well-fed lawn can be mowed closer and more frequently than a lawn which is sparse and lacking in fertility. Results of a height-of-cut study conducted at the Rhode Island Agricultural Experiment Station over a period of several years indicate that a denser and better quality lawn turf was obtained when the experimental plots of basic grasses were mowed at a height of three-fourths of an inch instead of one and one-half inches. But a good turf and high fertility are essential.

Close and systematic mowing encourages the lateral growth of the grass plants, helps to make a denser turf and aids in the control of broad-leaved weeds. Most grasses used in lawn mixtures do best when mowed at a height of three-fourths to one and one-fourth inches in height. Turf cut at three-fourths of an inch was subject to less disease, winter kill and smothering-out than turf cut at one and one-half inches.

Start mowing in the spring as soon as you can cut a swath and continue in the fall as long as the grass continues to grow. The old idea of allowing the grass to grow tall in the fall may lead to serious trouble. The tops of such tall cut grasses mat under pressure of their own weight or from heavy rains or snow and provide highly favorable conditions for disease, poor aeration and "winter kill".

See page 342

Summer Care of CAMELLIAS

Whether you grow camellias in the open ground or in containers, the summer care they receive will determine the success of the winter bloom.

MARY NOBLE, *Jacksonville, Florida*

THE CARE YOU GIVE your camellias during the summer will determine the quality and quantity of bloom you will get during the flowering season that starts in October and continues through April.

One of the most important needs of camellias throughout the summer period is water. In each case the gardener must cope with the problem of too much or too little, depending upon the section of the country in which he lives. Unless rain is frequent and lengthy, regular watering is essential through the summer. If plants go dry, growth will be slowed down or stunted, with the result that bud development is hindered.

Water is best applied by removing the nozzle and letting the hose run gently at the base of each plant until the soil is thoroughly soaked to a considerable depth. Generally, weekly watering in this manner is sufficient for established plants. First or second season plants will need more frequent attention to develop an adequate root system, while specimens in full sun will require more moisture to offset rapid evaporation from the foliage.

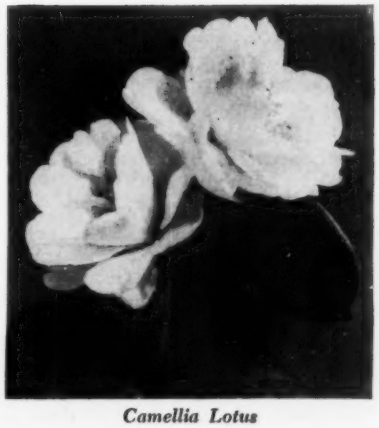
Either a device called a soil soaker or a sprinkling gadget that has five small hoses on one, for watering several plants simultaneously, is suitable for this purpose. The important point is to run the water long enough to soak the soil deeply. Surface watering only encourages roots to grow near the top of the soil, subjecting them to damage by extreme heat or cold. The flow should never be strong enough to wash soil away from the roots or disarrange the mulch.

Pot-grown and tubbed camellias require more frequent watering than plants grown in the ground. The ideal is soil kept constantly moist, never soggy, all the way to the bottom of the container. This happy condition can be achieved by practice.

Where the ground is low and the rainfall heavy, particularly in late summer, plants can be getting too much water. The solution for plants that are subject to submerging is to raise the beds. First lift out the plants, then install a layer of drainage material, surround the area with a coping and raise the soil level above that of the water.

To help offset evaporation during hot weather, overhead sprinkling of the foliage is suggested at twice weekly intervals. Camellias are native to foggy regions, and welcome the cleansing and

See page 344

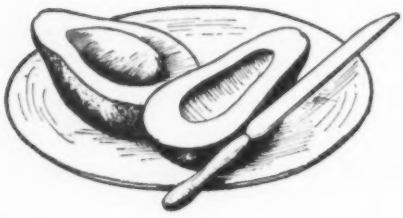


Camellia Lotus

MCFARLAND

Proper summer care of this camellia makes it flower well in winter.

YOU CAN EAT YOUR



AVOCADO

AND HAVE IT TOO!

WHICH END IS UP, the pointed or the flat?" "Do I start it in water or soil?" "When do I plant it?" These and others are some of the many questions asked about starting the seed of the avocado as a house plant.

Avocado, or alligator pear, is not new to indoor gardeners, who are at least familiar with it as a large, green, pear-shaped fruit sold frequently in fruit and vegetable markets. Yet many have started the large, hard seed in water or soil and watched the strong shoot appear and break into leaf, a process that never fails to be fascinating. Some gardeners even make it a hobby of starting the seed of every avocado they eat just to watch it get started and then give the young plants to friends or neighbors.

The origin of the name "alligator pear" is uncertain, although the "pear" part of the name obviously refers to the pear shape of the large fruits. *Curtis' Botanical Magazine* in describing the plant in 1851 explained that the word "alligator" is perhaps "a corruption of Aguacate, one of the names by which . . . it is known in Lima (Peru)." At any rate, the name has stuck, though avocado is another common name that is also frequently used.

Avocado is by nature a tree that attains 60 feet or more in its native tropical habitats. It has large, pointed, oval leaves, like those of the common rubber plant, four to eight inches long, glossy above and leathery in texture. It is for these leaves that it is grown, since fruit cannot be expected indoors, and only in large conservatories in cold regions does it ever flower, producing its small greenish flowers in clusters at the tips of the branches. Usually it is grown as a tree, with a definite trunk, and even when branches are low, the tree habit is dominant.

"Which end of the seed is up?" The answer to this question is "the pointed end". Keep this end up when starting it in either water or soil, although a healthy, viable seed will sprout even if placed upside down or on its side. However, keeping the point up will save the plant the trouble of reversing the direction of its shoot and roots.

"Should I start it in water or soil?" Actually, it makes little difference, since success comes with either method. Starting in water is fun because you can watch the roots appear if a clear glass container is used. First soak the seed in water for a few days to remove the outer covering. Then choose a tumbler, narrow enough at the top so that the seed will rest there without falling to the bottom, and fill with water just above the base of the seed.

If the glass or other container has too big a diameter at the top, insert three wooden toothpicks or match sticks

Left—avocado seed held with toothpicks on glass of water to root. Center and right—young potted specimen after it has begun to grow.

at equal distances in the sides of the seed and suspend it on the rim of the glass, adding water as directed. Sometimes, the seed will rot, as many gardeners have discovered, but there is not much to do about this except to take a chance.

One way to get around rotting is to start the seed in sandy soil. Decay is less apt to occur, but the seed will be hidden in the soil so its germination cannot be observed. Simply plant the seed in light soil, broad end down, and cover with a half inch of soil. Keep moist, but not wet, in a dark place, or at a windowsill with your other plants, and place in sun when shoot appears.

"When do I plant it?" As indicated, an avocado seed can be planted at any time of year, but if started in water or in soil, plant in its permanent quarters when the shoot is a few inches high. You can wait longer, so if you cannot get to it immediately, there is no cause for alarm. Avocado is an easy plant to grow, though watering is its chief difficulty, since both over and underwatering are harmful. Failure can often be traced to one or the other.

When planting use any general potting mixture as recommended for other house plants, but include enough organic matter to provide good drainage and to hold moisture. Place the sprouted seed about a half-inch below the soil surface and allow enough space at the top of the pot to hold plenty of water.

It's a Fast Grower

The size of container can actually vary considerably. In the beginning it can be small, but avocado is a very fast grower, and it will outgrow its small quarters quickly. Then it can be repotted carefully in the early spring, or at any season of the year, if merely lifted without disturbing the roots. As it continues to grow, it will need as large a pot as you can find, and then a tub.

Avocado is a heavy feeder, so add dehydrated manure or another organic fertilizer as well as bonemeal to the potting mixture. When it is growing actively in the spring and summer, water with a liquid fertilizer to which it will respond amazingly.

During winter withhold feeding, but water when needed to prevent drying out. This may be daily or several times a week. Sunshine is needed, although in the summer, a part shady location in the garden, protected from strong winds is best. Indoors the large leaves collect dust, and keeping them clean is a regular chore, well worth it because the natural gloss of the leaves is an attractive feature.

Careful watering of avocado cannot be stressed enough. The roots are succulent and are easily injured by prolonged moisture, especially during the rest period. On the other hand, this foliage plant demands plenty of water and will go limp quickly if permitted to dry.

Leaves will revive their form almost as quickly after water is given, but in a few days, or sometimes in a couple of weeks, the tips and edges begin to turn brown and in some instances they will turn yellow and drop. In other words, the effects of drying out are harmful, and unlike tough plants which revive without ill effects, avocado is sensitive to this neglect.

In growing alligator pear, this is one of the most important needs to keep in mind. A humid atmosphere is also appreciated, though it does well in the hot, dry air of our homes if the soil is kept always moist.

One method to prevent drying out of the soil to some extent is to set the pot in a larger one and then insert peatmoss between the two pots, keeping it constantly moist. Pots in jardinieres also do not dry out so easily, but great care must be exercised to make certain that the lower part of the pot does not rest in water.

An avocado plant can take many shapes. By nature it is a tree, though in pots it tends to branch lowly and freely and become bushy in habit. Side branches can be removed as they appear, and if you like you can have a tree with a six or eight foot trunk, with branches towering overhead. In this case, support with a strong stake, since the top will be too heavy for the slender trunk.

Avocado is a vigorous grower, so you can prune and shape it to keep it in bounds. Do this just before new growth begins, usually in the early spring, by removing entire branches or heading them to desired points, provided there is a leaf or an eye where a new sprout can appear.

GENEREUX

Young avocado, showing the large, handsome leaves.

If you want to increase your plants.....

WHY NOT BE YOUR OWN PROPAGATOR

ROY M. NORDINE, *Morton Arboretum, Lisle, Illinois*

NOW THAT SUMMER is here and your gardens are green with trees, shrubs, and other kinds of plants that are in an actively growing condition, you are perhaps wondering whether or not you can increase your favorite plants from softwood cuttings.

Perhaps you want additional yews or hollies for yourself, perhaps you want to root young plants of dogwood or azalea for friends or neighbors or it might be that you are taking part in a community project that, over a long range, involves the planting of material along highways, in parks or in other civic developments, such as libraries or schools, that are being planned for the future.

For whatever reason, you can at this time take cuttings of desirable plants and root them with ease provided you follow certain basic rules. You'll find that there is a special kind of thrill that comes from increasing plants, which today is possible for both amateur and professional gardeners, through the use of polyethylene plastics.

The ability of this plastic film to permit the passage of air, but not water vapor, creates the high humidity similar to greenhouses, a condition essential to the successful rooting of softwood cuttings.

The monocotyledons, plants which have one seed leaf and lack a cambium tissue, cannot be grown by softwood cuttings. Included are grasses, iris and lilies. On the other hand, many plants in the dicotyledon group, kinds which have two seed leaves and a cambium tissue, can be increased in this manner.

Included in this group are annuals, perennials, house plants, trees, shrubs and evergreens. Within each genus, such as *Syringa* (lilac), there are some species and varieties that root easily, some that are difficult and slow and others that refuse to root.

Two-year old rhododendron cutting, two-year old seedling, freshly taken cutting and cutting showing roots it made after four months.

Successful rooting depends on the time the cuttings are taken. With the majority of plants, this comes at the conclusion of the flush of spring growth, when the end leaves on each twig are expanding or have reached their full size. From plants that produce new growth during the summer, cuttings can be made any time after the first flush of spring growth has passed.

The cutting wood should be gathered quickly and protected from drying out or wilting by wrapping it in wet clean paper, cloth, burlap or polyethylene. Taken into a cool room and moistened with water, it should be made into cuttings and inserted in the medium as soon as possible.

Use only a sharp knife when making any of the several kinds of cuttings. The type of cuttings consist of stem, mallet, heel and bud. Only experience will determine which type to use, though stem cuttings are most common.

To obtain a stem cutting, make a basal cut at a 45 degree angle just below a node, the point of leaf attachment to the stem. Remove the lower leaves, and if the remaining leaves are an inch or more long, cut them in half to cut down transpiration. Four inches is the length of the average softwood cutting.

Although a few cuttings will root in water, it is not generally practicable. They must be inserted in a medium, such as clean, sharp builder's sand, washed over a fine mesh screen if dirty, vermiculite or a mixture of half sand and fine peatmoss. Press the medium down by hand along all sides and corners of the container, flower pot or flat. Then water thoroughly and allow to stand at least 12 hours before using.

Cuttings, inserted in an opening made by a pencil, or in a furrow made by a knife, must be placed deep enough to provide good anchorage. Space in rows so the leaves touch, allowing a little more space between rows. After inserting, press them firmly with the fingers, then water until the small humps made by the fingers have levelled off.

Plant hormones are a valuable aid in the amount of roots made by cuttings and are especially recommended for difficult to root kinds. These hormones, available in garden stores, are prepared in various grades and must be used according to directions.

Set the container of cuttings outside under light shade with a polyethylene

cover placed over it. An ideal cover is a wooden frame covered with polyethylene, placed high enough to allow several inches clearance above the top of the cuttings. Such a frame can be large enough to cover several flats.

After placing the frame over the container, inspect at the ground line and seal any openings with soil. An alternate cover consists of stiff wires fashioned into hoops over the top of the container, with polyethylene stretched over the hoops and folded under the container.

Each morning, water vapor will gather in drops on the inside of the film, mostly on the top, but the heat of the day will disperse it into the starting medium. As soon as the amount of vapor decreases noticeably in the morning, lift the cover so the cuttings may be sprinkled lightly and the ground around the container watered thoroughly.

The first watering may not come for 10 to 14 days after preparing the cuttings. The polyethylene must be carefully watched, and when drops of moisture decrease in number, watering will be needed.

The time required for roots to form varies from a few days, as in the case of aluminum plant, to several months for others. Cuttings are best not disturbed until roots are formed and for this it is necessary to develop a sense of knowing when cuttings have rooted. New growth with new leaves does not always indicate roots. A gentle pull of the cutting by the fingers will indicate whether roots have developed to anchor the cutting in the medium.

A cutting can be lifted and potted as soon as a few short roots have formed or it can be left in the medium. House plants should be transplanted as soon as ready. Other cuttings that root in a few weeks can be moved to soil so they will become well established before winter.

Cover After Transplanting

Such potted plants must be returned to the humid conditions under the polyethylene cover for a week or more after transplanting, raising the cover gradually over a period of a week or 10 days.

Frequently, newly rooted cuttings require extra protection during the first winter. The slower rooting types can remain in the medium and become dormant, storing the container with the cuttings in the medium in a coldframe, which will be covered for the winter. Or the rooted cuttings can be lifted in the late fall and placed in small bundles in polyethylene bags, with a handful of damp sphagnum moss in the bottom.

These bags can be stored in a temperature range of between 35° and 50°, though a 40° condition is ideal. If the storage room is dry, it may be necessary to fasten the top of the polyethylene bags containing the cuttings. In early spring, the cuttings can be transplanted, preferably to flats or boxes, to be grown until large enough to handle safely.

It is advisable for the amateur to start with the easy-to-root plants and learn methods and procedures before venturing to try the more difficult ones. Among the easy-to-root woody plants are evergreen types of azaleas, barberry, box, butterfly bush, cotoneaster, dogwood, deutzia, English ivy and euonymus.

Others include firethorn or pyracantha, forsythia, honeysuckle, hydrangea, kerria, lilac (easy to difficult depending on variety) and Oregon holly grape. Yet other easy rooting kinds are magnolia, dawn redwood, mock-orange, pachysandra, privet, some species of roses, spirea, St. Johnswort, viburnum, weigela and willow.

Atomic Radiation Effects

From page 313

conventional methods of preservation, such as canning and freezing, but it will eventually find an important place in the food industry.

Radioisotopes are similar to other naturally occurring elements, such as carbon, potassium or calcium, except that they give off radiations similar to x-rays detectible by a Geiger counter. Further, these radiations produce an image on film to make auto-radiograms, making it possible to trace the movement of nutrients in plants.

For example, using radioisotopes, foliar or "non-root" feeding of plants has been conclusively demonstrated. In fact, today, foliar sprays of nitrogen and of mineral nutrients, such as magnesium, zinc, and iron, are accepted methods of fertilizer application.

Isotopes have also shown that nutrients can be lost from above-ground plant parts by leaching. It has been found that appreciable amounts of potash, calcium, magnesium, manganese and other important nutrients can

Radioactive phosphorus is applied to bean leaves in order to study utilization of phosphorus by plant.

be leached from leaves. In one instance crop yield was reduced 30 percent.

Tracers have been used extensively in studies of fertilizer application. By mixing a small amount of an isotope in the fertilizer, correct fertilizer placement for a crop, whether banded or broadcast, the preferred depth in the soil and distance from the roots can be determined. The best fertilizer types, formulations and chemical sources for a crop can also be determined. This particular field of plant research promises much in the development of new fertilizer types and methods of application.

Tagging of insects with radioactive substances has enabled scientists to study the life cycles and migration patterns of the insects. Labeling of mosquitoes has revealed life habits which permit better control of the pest.

Male screw-worm flies are rendered sterile by irradiation. Since screw-worm flies mate but once, the females can produce no offspring so that the insect population is depleted rapidly. This is an important advance in insect control.

Spraying for pest and weed control will continue to be aided by tagged chemicals, which will tell why and how a particular spray kills. Systemic pesticides, materials which penetrate the plant and move throughout it, kill pests which attack the plant.

In summary, the discovery of atomic energy has brought several helpful techniques to horticulture, notably in plant breeding, food preservation, growth and nutrition.

This young crossandra plant has been blooming three weeks, though spike has not finished flowering.

Crossandra Meets Every Requirement

KEITH S. PHILLIPS, *Ocean View, Delaware*

ARE YOU LOOKING FOR a house plant that is undemanding, easy to grow and free-flowering by habit?

If so, it is time you investigated what *Crossandra undulaefolia* has to offer, for it meets all these requirements adequately—and more. You will be pleased with its elegant appearance, delighted with its glossy, gardenia-like foliage and intrigued with its brilliant salmon-orange flowers.

A member of the acanthus family, it is related to jacobinia, shrimp plant and aphelandra, though it resembles none of these. Crossandra prefers your warmest room and a favored spot in a light window.

Heat-lover or not, I find that it resents an intense, burning sun and will wilt rapidly in protest under such treatment. It seems to do best in an east window, though even in this exposure, during the summer months, it will wilt. So if you must grow it in a window with direct sunlight, provide some means of shading it.

Water crossandra daily and feed every two weeks with a liquid plant food and it will reward you with months and months of constant bloom. A weekly syringing to keep its foliage clean of dirt and dust and to provide it with extra humidity will be appreciated.

Perhaps its greatest demand is for daily watering, particularly when the flower spikes appear. When the plant does not get enough water, you will find that the spikes will begin to wither. Try to keep soil moderately moist, though not soggy. In the winter, use water that is lukewarm.

When the flowers fade, the spike will become the seed-bearer, and you will want to save some of the seed to increase your collection or to give away. The plum-like seed-pod, reminiscent of ripened wheat, is made up of numerous capsules, each containing about four seeds.

Seeds, which are round and flat, resemble those of tomato. As soon as they become damp, tiny hairs spring erect and the seeds look like tiny puff-balls. The seed pod can be harvested after the stem has withered and turned brown.

When the pod begins to ripen, it is important that you cease giving the plant its weekly syringings, since direct contact with water will cause it to burst, showering its seeds in the process.

You will be wise, too, if you do not permit too many spikes to remain on the plant after flowering. One or two seed pods will supply all the seeds you will want. Once, greedy for seeds, I al-

See page 345

AUTHOR PHOTOS

These plantlets were germinated and grown in vermiculite. Young plant in the front has just been transplanted and pinched back to induce branching.

Dainty and Exquisite Are . . .

Violas in The Shade

BETTY JANE HAYWARD, *Scarborough, Maine*

ARE YOU LOOKING for something that will flower all summer long? If so, give violas a try, since few plants bloom so long or so generously.

To many gardeners, violas are only miniature pansies, though in reality they are a distinct group of plants. The ancestry of the pansy can be traced to the alpine wild pansy (*Viola tricolor*), while many species of violas figure in the strains of the modern viola hybrids.

Among these, perhaps the greatest contributor has been the tufted pansy (*V. cornuta*), and varieties that have round faces, with clear colors, are examples. Others have also been used in breeding, including the European yellow violet (*V. lutea*) and the common little viola of the British Isles and the meadows of Europe.

Violas are so easy to grow that everyone who gardens has probably used them in quantity. I like to plant seed a little earlier in summer than recommended for pansies, usually in early July.

I sow my seed in the coldframe. The rows for separate colors I prepare by pressing down on the soil with a flat piece of wood, the width of a lath, leaving a ridge between each to keep the colors separate. I sow the seed rather thinly and sift soil over it to cover lightly.

In June, when the weather is warm and the sun generally hot, I remove the cover and stretch a piece of cheesecloth or burlap over the coldframe to provide shade, which hastens germination and protects the frame from rain. Furthermore, it shields the seed from hungry little birds.

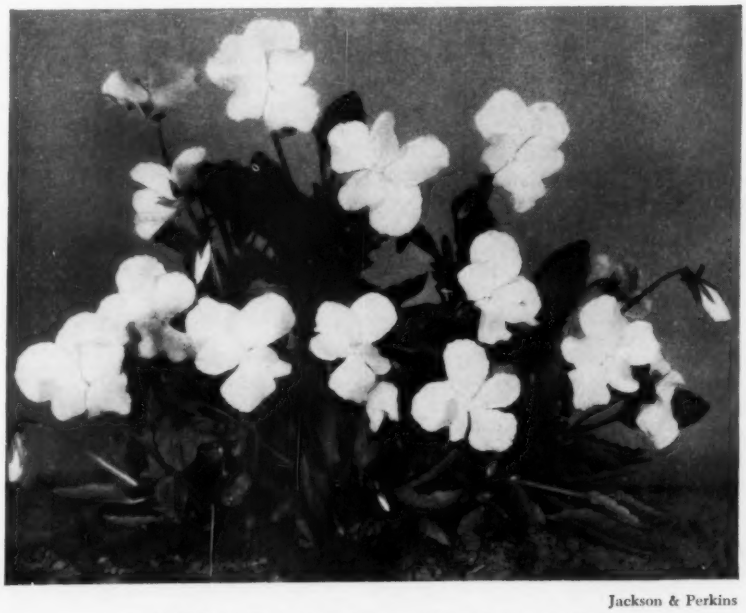
Violas develop quickly. It is imperative, therefore, to transplant them from the seed frame at the right time, when they have formed four or six true leaves. Delay may cause spindly growth from which the plants never seem to recover, and one transplanting in good soil will produce excellent stock for garden use.

Few flowers contribute more to pleasing color harmonies than hybrid violas. In borders with spring bulbs or in groups in front of perennials and shrubs, they supply color for many long weeks in spring and summer. In the rock garden they fill many needs, rescuing it from dullness when the great display of spring has passed.

In my rock garden, I like to use violas in groups of six or more of one color. Often the masses are much larger. Informally threading in and out among the mats of arabis, aubrieta and alyssum, they create a charming picture. To repeat a color group in a distant part of the garden is effective because it gives a feeling of unity.

Among my favorites is Jersey Gem, a true perennial sort that is well known and widely used. It, too, can be raised from seed, though the colors may vary considerably. The color is usually violet, but some years ago I had a lavender, which I still grow.

Jersey Gem is a viola which should be divided only in moderation. In growing it for many years, I have observed that it is slower than many others to come into flower, that it is generous with bloom for a time and that its flowering tapers off after that.



Jackson & Perkins

Viola Yellow Vixen has the appealing charm of all the tribe.

Purple Heart, another deep purple, has very large, ruffled blossoms, held high above the foliage on strong, stiff stems. Flowers are as large as pansies, though they possess the more graceful character of violas.

Blue Perfection has fairly good color, though it has a rather stringy, loose

See page 341

How We Achieve Continuous Color In . . .

The Flower Garden At Mount Vernon

ROBERT B. FISHER, *Horticulturist*, Mount Vernon, Virginia

FOR CENTURIES botanists and gardeners have been developing planting calendars, usually presented as a "garden month-by-month" or "what to do in the month of ——".

Today, it is possible to schedule planting details to the very day, allowing time for minor adjustments due to the vagaries of the weather.

With this type of planning, virtually all details become automatic. Thus relieved of them during the growing season, the gardener can carry out routine cultural procedures in a more effective manner.

In developing a program for the Flower Garden at Mount Vernon, it was necessary to work in reverse, that is, to plan from the finished, or blooming, stage of the plantings back to the propagation stage. Most of the more than one million visitors each year arrive during the spring and summer, and they wish to see the garden in full color regardless of the date.

This desire is reasonable, perhaps, though it leads to complications. Sometimes it is necessary to grow more than one crop of a particular kind in order to provide the most colorful display possible. Spring-blooming bulbs provide continuing color from late February through the month of May, but this display is not complete. It must be supplemented, and it is displaced eventually by biennials, annuals and perennials, many of which are normally treated as biennials.

Since these plants are used to provide a continuity of color in the garden, they must be nearly ready to bloom when planted. All of the preliminary growing must be attended under well regulated conditions. This work is done in a service area, which is removed from the exhibition garden and is equipped with adequate modern facilities, including a greenhouse, coldframes and a tract of good nursery ground.

The first herbaceous plants to bloom in the season are pansies, English violets and English wallflowers, which continue to bloom through June or until high temperatures stifle them. Plants are set out during the first week of March, or earlier if the weather permits, as young specimens grown in small pots in the coldframe over-winter for easy handling at planting time.

Seed of pansies and violets is sown in mid-July in shallow pots or seed pans, which are plunged in flats of moist peatmoss, to be transplanted to a better location in the greenhouse as necessary. Seed of wallflower is sown during September in the same manner. Many other plants are treated in this manner as indicated in the planting schedule.

Other early flowering perennials set out during March include wild sweet william (*Phlox divaricata*), which blooms from April 20 to May 14, honesty, which flowers from April 10 to June 10, and rock-cress, which provides color from April 10 to May 15. These plants, however, are treated in a different manner.

Wild sweet william is increased by cuttings taken in July from plants which have been lifted from the garden and potted in mid-May. The rooted cuttings are planted in the nursery until mid-March, when they are transplanted into the exhibition garden for bloom in late April with the bybloem tulip variety Zomerschoon.

Seed of honesty is sown in June, while that of rock-cress is planted in pans in the greenhouse in July. Seedlings are set out in the nursery during August and September for development during the warm autumn days and over winter. Forget-me-nots, hollyhocks and larkspur germinate regularly and spontaneously in the garden. Forget-me-nots, planted in the garden during the first week of April, are collected in the garden during late August.

Hollyhocks germinate readily throughout the garden areas and are lifted in early April and replanted. Seed-

The kitchen garden is as charming as the flower garden.

See page 338

THE SPRING VIEW of the flower garden at George Washington's home, Mount Vernon, features the annual display of spring-blooming bulbs and biennials. Small trees of the native wild sweet crab-apple (*Malus coronaria*) are planted in the informal borders, which are arranged in a series of curves reflecting the boundary wall on which the "pallisade" fence was first erected in 1786.

The schoolhouse at the west end of the enclosure is an elevated structure from which the entire garden could be surveyed until the dwarf boxwood edging attained sufficient size to interrupt this expanse of nearly an acre. This dwarf boxwood, which was planted in 1798 to edge some of the borders, has been maintained as a mature hedge for more than half a century.

Although there is no surviving documentary evidence for the shape and the contents of these borders, they have been continuously maintained in this manner since 1859, when the garden design was recovered from the weedy overgrowth of neglect. Of the herbaceous materials on display through the season, only a few varieties are actually mentioned in the domestic records. These are supplemented by selections from the long list of ornamentals which were available to American gardeners of the 18th century.

Two of the 12 large forest trees which survive from General Washington's plantings may be seen in the background. The tree on the left is a native white ash (*Fraxinus americana*) and the specimen beyond the schoolhouse represents a black mulberry (*Morus nigra*), a native of Persia, which has been long cultivated for its fruit and dense foliage.

For Their Brilliant Colors
For Their Extended Period Of Bloom

Depend On Our Own Native Azaleas

FRED C. GALLE, Ida Cason Callaway Gardens, Chipley, Georgia

OUR NATIVE AZALEAS have been called the most beautiful of all indigenous shrubs.

Highly regarded by English and European gardeners, possibly more than in their native country, misbeliefs and a confusion in names have been attached to these azaleas whose blossoms may be white, orange, yellow, pink or flaming red.

Botanically, the native azaleas belong to the genus *Rhododendron*, though many botanists claim that all deciduous rhododendrons should be called azaleas. There are some who call the native azaleas wild honeysuckle, a name associated with true honeysuckle and even with the "pesty" Japanese honeysuckle that in many parts of the country is a weed.

Since cuttings of deciduous azaleas are difficult to root, gardeners depend upon seedling plants or collected wild stock. Seedlings grow rapidly and flower in three to five years. Collected plants, unless purchased from a nurseryman, frequently die within a few months.

To reduce this high mortality, dig plants with a ball of soil to get as much of the irregular and straggly root system as possible. Then cut the plant to within six to eight inches of the ground in order to induce adventitious buds on the stems to develop and produce bushy, flowering plants the second season.

All of the native azaleas grow best in an acid soil, high in organic matter, with a mulch of leaves or pine straw covering their shallow roots. Various materials are available to keep the soil acid, but the easiest to obtain and use is powdered sulfur. Native azaleas combine well with other acid loving plants in the landscape and can be displayed against an evergreen background.

Flame azalea (*Azalea calendulaceae*) is generally considered the most attractive of all native species. One hundred and fifty years ago, William Bartram spoke of it as the most gay and brilliant flowering shrub yet known. Flame azalea grows over a wide range, but is at its best in the Appalachian Mountains, covering open hillside woods as an upright shrub, with slightly spreading branches.

The flowers, borne five to seven in a cluster, vary from brilliant yellow and orange to scarlet, with an orange blotch on the upper petal. Plants bloom after the leaves have unfolded in May and early June. The floral tube is one inch in length and the petals are two inches or more across. There are five long stamens, with a pistil that protrudes from the center of the tube.

Many azaleas that grow profusely in the south are hardy in the northern states. Others are native over a wide

See next page

← *Flame azalea*

Pink-shell azalea is one of our loveliest native species.

Depend on Native Azaleas

From previous page

area. One of the first species to flower in the spring, even before the flowering dogwood, is the pinxter-bloom azalea (*A. nudiflora*), found in open woods from Massachusetts to Tennessee, westward to Ohio. With a stoloniferous habit of growth, it usually grows in clonal clumps or colonies.

Generally reaching three to five feet in height, in heavily wooded areas, plants will attain 10 feet. The delicately fragrant flowers, which appear in April or May before the new growth, are borne in clusters that vary from light pink to near white.

Accompanying pinxter-bloom azalea in early spring is the rose-shell azalea (*A. rosea*). This species is less creeping in habit, while flowers, with their clove-scented fragrance, are distinct. In color it varies from deep pink to violet red.

An early flowering southern species is the Piedmont azalea (*A. canescens*), found in moist woods and dry sites. It forms a large shrub to 15 feet, with flowers that have a delicate honeysuckle scent. Colors are very similar to both the pinxter-bloom and rose-shell azalea. Plants are hardy in Philadelphia.

Yellow-flowering Kind

Also in the deep south is an early flowering yellow shrub called Florida azalea (*A. austrina*), a close kin to the Piedmont azalea, though it flowers before. The hardiness of this species is yet to be learned, but it is worth trying in the north.

Coming several weeks later, along with flowering dogwood, is the pink-shell azalea (*A. vaseyi*), with attractive pale pink flowers, which are occasionally white. The individual flowers are bell-shaped, rather than tubular, as are most. They appear two-lipped because of the split lobing of the petals. Pink-shell azalea does best in slightly moist soils and makes a shrub up to 15 feet.

Another similar azalea is rhodora (*A. canadensis*), made famous by the poem by Ralph Waldo Emerson. A hardy species, preferring moist, cool climates, rather than dry soils and hot areas, rhodora is valued for its early, bright, rose-purple flowers. A white flowered form, *A. canadensis albiflora*, is also available. Plants are generally three to five feet in height, with flowers two-lipped, similar to those of the pink-shell azaleas.

The coast azalea (*A. atlantica*) is a low-growing shrub, difficult to work with, due to its habit of growth. Undoubtedly, better clones will be found. Flowers are white, or white flushed, with a pale violet red, blotched yellow, and have a pungent odor. This hardy plant has hybridized naturally with several species.

The oconee azalea (*A. speciosa*) blooms somewhat later. Native in the Piedmont region of Georgia and South Carolina, it is called by many flame azealea, but plants flower three to four weeks earlier than the true flame azalea. Oconee azalea varies from a low, sprawling shrub, one to two feet in height, to a compact specimen, four to five feet tall.

Later in the spring season, at the time the mountain laurel is in bloom, the Alabama azalea (*A. alabamensis*) comes into flower. The plant is considered a dwarf, but there are intergrades with Piedmont azalea that become tall shrubs. Typically, it is white flowered, fragrant and lemon scented.

Among the hybrids are pink flowering forms. Particularly attractive because of its late flowering season, Alabama azalea should be tried in the north to fill the gap between the early azaleas and the later flowering kinds.

Among the azaleas that flower after the leaves appear (flame azalea is in this group), swamp azalea (*A. viscosa*) is well known. Found in moist soil from Maine to South Carolina and Tennessee, it is hardy over a vast area. Becoming a tall shrub, 10 to 15 feet in height, plants flower in May, but, in the north, blossoms open in June or even July.

The sticky flowers of this azalea are white, varying to light pink and have a strong spice scent. Swamp azalea is known to hybridize in the wild with the sweet azalea so that it is sometimes difficult to distinguish between the two.

Sweet azalea or smooth azalea (*A. arborescens*), another late flowering species, is variable in form. Flowers are white, shading to pink and occasionally light yellow, with a yellow blotch in the center. The style protruding from the flower is red and stands out in contrast with the petals. Noted for its delightful fragrance, similar to heliotrope, sweet azalea is hardy and not so fussy as to site.

WINTER-HARDY AZALEAS and RHODODENDRONS

PUBLISHED BY THE MASSACHUSETTS HORTICULTURAL SOCIETY

BY CLEMENT GRAY BOWERS

Illustrated with 17 Halftones

Here is a little book devoted to those types of hardy azaleas and rhododendrons that can be expected to do well in the northeastern section of our country. Dr. Bowers has written it especially for amateur gardeners who are eager to know more about this spectacular group of flowering shrubs.

In nine lively chapters, the author gives his readers a graphic presentation of the various winter-hardy species — their uses, soil requirements and general needs. He gives special attention to the most desirable places to plant specimens and to the control of insects and diseases, while his advice on collecting the most desirable form is particularly helpful. The list of species, hybrid groups and clones add immensely to the value of this practical little volume which is written in a most pleasant fashion.

$3.00 a Copy Postpaid

ORDER TODAY FROM

HORTICULTURE'S Book Department
300 Massachusetts Avenue, Boston 15, Massachusetts

Enclosed is ☐ Check ☐ Money Order

Please send me.... copies of Winter-Hardy Azaleas and Rhododendrons $3.00 *postpaid*

Name.....

Street.....

City..... .....*Zone*.....*State* .....

Used and appreciated for 20 years by good gardeners

HY-TROUS

REG. U. S. PAT. OFF.

LIQUID FERTILIZER

CONCENTRATED — ODORLESS

Guaranteed analysis

Available Nitrogen, not less than 4%

Available Phosphoric Acid, not less than 8%

Available Potash, not less than 4%

Hy-Trous contains 20 vital trace elements valuable to plant growth

★ ★ ★ ★ ★

SIZES

3 oz.	25¢
8 oz.	59¢
16 oz.	99¢
32 oz.	$1.79
Gallon	$5.95

SPECIAL OFFER

A $2.45 LAWN GUN FOR ONLY **$1.00**

Send request to **HY-TROUS,** 8 Newbury St., Boston, Mass.

HY-TROUS

for all

★ LAWNS
★ FLOWERS
★ VEGETABLES
★ FRUITS
★ SHRUBS
★ TREES
★ HOUSE PLANTS

Hy-Trous will not burn the most delicate flower, leaf or root if used as instructed.

If your garden supply dealer does not have Hy-Trous—send to:

HY-TROUS SALES CO.
8 Newbury Street
Boston (16) Mass.

Please send me
postpaid .....
containers of Hy-Trous
size .....
Name .....
.....
Address
.....
.....
.....
Check or Money Order

1 TABLESPOONFUL MAKES 1 FULL GALLON

Mt. Vernon Flower Garden

From page 332

lings, collected in August, are transplanted to the nursery plot for development during the autumn and over winter. One plot of nursery ground is annually reseeded to larkspur plants to be used for cut flowers. Some of the seedlings are planted among madonna lilies during the winter or early spring.

A few plants, such as the native columbine, yellow alyssum, blue flax, sweet rocket, maltese cross and cardinal flower, require more than one full growing season to mature for exhibition. Many can be rejuvenated in the nursery, when lifted from the exhibition garden. However, plants are usually allowed to develop ripe seed as a part of their display and the life cycle is virtually completed by that time. Constant replacements are necessary to assure plants for exhibition each season.

Toward the end of May, the tender plants are introduced into the border plantings as small pot plants and as standards. Small pot plants of turnsole, fuchsia or ladies' eardrops, wild sage, cape aster and geraniums are grown from rooted cuttings, taken during late December from stock plants in the greenhouse. These plants are left in their pots and plunged in the borders until fall when they are put back into the greenhouse or in deep frames.

Many Kinds of Perennials

The schedule under discussion does not include any specifications for the more permanant herbaceous plants, such as evergreen candytuft (*Iberis sempervirens*), bugbane or Carolina thermopsis (*Thermopsis caroliniana*), false indigo (*Baptisia australis*), meadowrue (*Thalictrum* sp.), monkshood (*Aconitum napellus*), iris (*Iris* sp.), common peony (*Paeonia officinalis*), Scotch broom (*Cytisus scoparius*), summer phlox (*Phlox paniculata*), New England aster (*Aster novae-angliae*) and Canada goldenrod (*Solidago canadensis*).

Nor does it include any of the bulbous plants, which are planted in the summer for fall bloom and in the fall for spring bloom. The former group is not replaced annually and the planting of the latter group is dependent upon the date of delivery which is beyond local control.

The planting schedule indicates, in addition to the dates shown, the total number of plants and the variations in colors required by the plans.

The Flower Garden Planting Schedule

Plant	Sown or Propagated	Planted
English Wallflower (*Cheiranthus cheiri*)	September	March 7
Larkspur (*Delphinium elatum*)	September†	"
English violet (*Viola cornuta*)	July	"
Pansy (*Viola tricolor*)	"	"
Wild sweet william (*Phlox divaricata*)	"	March 21
Yellow alyssum (*Alyssum saxatile*)	July#	"
Honesty (*Lunaria biennis*)	June	March 24
Rock-cress (*Arabis alpina*)	July	March 26
Dwarf Jacobs-ladder (*Polemonium reptans*)	August	"
Forget-me-not (*Myosotis alpestris*)	August†	April 2
Cowslip (*Primula veris*)	June	"
Snapdragons (*Antirrhinum majus*)	November*	April 3
English daisy (*Bellis perennis*)	June	April 4
Snow-in-summer (*Cerastium tomentosum*)	December	"
Sweet scabious (*Scabiosa grandiflora*)	September	April 7
Hollyhock (*Althea rosea*)	August†	April 9
Columbine (*Aquilegia canadensis*)	July#	"
Sweet alyssum (*Alyssum maritimum*)	February*	April 11
Sneezewort (*Achillea ptarmica*)	July#	April 13
Leopard's-bane (*Doronicum excelsum*)	June	"
Sea pink (*Statice armeria*)	July	April 14
Globe candytuft (*Iberis umbellata*)	September*	April 15
Sweet sultan (*Centaurea imperialis*)	September*	"
Cornflower (*Centaurea cyanus*)	September*	April 16
Tickseed (*Calliopsis tinctoria*)	September	April 17
Sweet rocket (*Hesperis matronalis*)	June	"
Corol-bells (*Heuchera sanguinea*)	July#	"
Blue flax (*Linum perenne*)	"	"
Scotch pink (*Dianthus plumarius*)	June	April 21
Maltese cross (*Lychnis chalcedonica*)	July#	"
Ragged robin (*Lychnis flos-cuculi*)	July	"
Canterbury bells (*Campanula medium*)	June	April 24
Cup-and-saucer (*Campanula medium calycanthema*)	"	"
Peach-leaved bellflower (*Campanula persicifolia*)	"	"
Clary (*Salvia sclarea*)	August	April 25
Cape aster (*Agathea coelestis*)	December	April 28
Pot-marigold (*Calendula officinalis*)	January*	"
Evening primrose (*Oenothera biennis*)	July	"
Stock (*Mathiola incana*)	January*	May 1
Garden heliotrope (*Valeriana officinalis*)	August	"
Jacobs-ladder (*Polemonium caeruleum*)	July	May 2
Sweet william (*Dianthus barbatus*)	June	May 5
Sweet wivelsfield (*Dianthus carthusianorum*)	"	"
Foxglove (*Digitalis purpurea*)	July	May 8
Herb bennet (*Geum coccineum*)	"	"
Globe candytuft (*Iberis umbellata*)	February*	May 9
Great-flowered bell-flower (*Platycodon grandiflora*)	August#	"
Single catchfly (*Lychnis viscaria*)	July	"
Paris daisy (*Chrysanthemum frutescens*)	December	May 11
Stokes' aster (*Stokesia laevis*)	August	May 14
Eringo (*Eryngium amethystinum*)	June	May 15
Giant-summer hyacinth (*Galtonia candicans*)	February‡	"
Tuberose (*Polianthes tuberosa*)	"	May 16
Turnsole (*Heliotropium peruvianum*)	December	"
Three-colored crysanthemum (*C. carinatum*)	February	May 19
Moon daisy (*Chrysanthemum maximum*)	August	"
Cardinal flower (*Lobelia cardinalis*)	April#	May 20
Bachelor's-button (*Gomphrena globosa*)	March*	"
Marvel of Peru (*Mirabilis jalapa*)	April	May 21
Ladies' eardrop (*Fuchsia magellanica*)	December	May 26
Rose geranium (*Pelargonium graveolens*)	"	"
Garden geranium (*Pelargonium zonale*)	"	"
Wild sage (*Lantana camarra*)	"	"
Spider flower (*Cleome spinosa*)	March*	May 27
Floss flower (*Ageratum houstonianum*)	"	May 28
Hawksbeard (*Crepis rubra*)	March	"
Tassel flower (*Cacalia coccinea*)	April	May 29
Cupid's-dart (*Catananche caerulea*)	July	"
Summer adonis (*Adonis aestivalis*)	February	June 2
Annual bellflower (*Campanula macrostyla*)	March	"
Castor bean plant (*Ricinus communis*)	May	"
Shell-flower (*Molucella laevis*)	February	June 3
Flowering tobacco (*Nicotiana affinis*)	April*	June 4
Snapdragon (*Antirrhinum majus*)	February*	June 5

Cornflower (*Centaurea cyanus*)	April*	"
Sweet sultan (*Centaurea imperialis*)	"	"
Jamestown weed (*Datura stramonium*)	"	June 6
Spanish blush mallow (*Lavatera trimestris*)	April	"
Madagascar periwinkle (*Vinca rosea alba*)	February*	June 9
Creeping vervain (*Verbena grandiflora*)	"	"
Strawflower (*Helichrysum bracteatum*)	March*	June 10
China Pink (*Dianthus chinensis*)	April	June 13
Golden ageratum (*Lonas inodora*)	"	June 16
Annual soapwort (*Saponaria vaccaria*)	"	"
Dwarf French marigold (*Tagetes patula*)	May	June 20
Flower-gentle (*Amaranthus caudatus*)	April	June 23
Joseph's-coat (*Amaranthus tricolor*)	"	"
Tall French marigold (*Tagetes patula*)	May	June 27
African marigold (*Tagetes erecta*)	"	"
Spider flower (*Cleome spinosa*)	May*	July 2
Sweet alyssum (*Alyssum maritimum*)	June*	July 7
Strawflower (*Helichrysum bracteatum*)	May*	July 9
China aster (*Callistephus chinensis*)	May	July 11
Female balsamine (*Impatiens balsamina*)	June	"
Floss flower (*Ageratum houstonianum*)	June*	July 14
Bachelor's-button (*Gomphrena globosa*)	May*	July 15
Madagascar periwinkle (*Vinca rosea alba*)	"	July 16
Snapdragon (*Antirrhinum majus*)	March*	July 17
Spiked amaranth (*Celosia spicata*)	May	July 21
Cockscomb (*Celosia cristata*)	June	July 25
Feathered amaranth (*Celosia plumosa*)	"	"
Pot-marigold (*Calendula officinalis*)	June*	July 28
Jamestown weed (*Datura stramonium*)	"	"
Flowering tobacco (*Nicotiana affinis*)	"	August 4
Snapdragon (*Antirrhinum majus*)	"	"
Spider flower (*Cleome spinosa*)	"	August 5
Sweet alyssum (*A. maritimum*)	July*	August 6
Creeping vervain (*Verbena grandiflora*)	June*	August 11
Annual chamomile (*Cladanthus arabicus*)	June	August 15
Violet-colored zinnia (*Zinnia elegans*)	"	August 26
Many-flowered zinnia (*Zinnia multiflora*)	"	"
Pot-marigold (*Calendula officinalis*)	July*	Sept. 10
Stock (*Mathiola incana*)	"	Sept. 12

Key to notes:

*More than one crop a year.

#More than full year required for plants to develop to flowering size from seed sown year before.

†Sowings not necessary if spontaneous germination has been successful in garden.

‡Started as bulbs, potted during month indicated.

The greenhouse forms an attractive background for the Flower Garden.

You Can Plant Annuals Now For Quick Color

From page 317

Yet another way to have a garden of annuals, even if starting in June, is by sowing seed of the fast maturing kinds. It will mean a longer wait for color effects, nevertheless, you will have a display by late summer and, in some cases, in a few short weeks.

One of the quickest annuals to flower, only three weeks from time the seed is sown, is the many colored single or double portulaca. Even in a dry and hot summer, this low annual can be counted on to thrive, asking only for a sunny spot in well-drained soil that is not too rich. The only trouble with portulaca is that flowers open only when the sun is shining.

Try Hybrid Nicotianas

Nicotiana is another quick growing annual. Attaining some three feet in height, the flowers of older sorts opened at night and closed during the bright sun of the day. Now, however, there are several new strains that remain open during the day, such as Daylight and the Sensation hybrids.

Calliopsis, in yellow, gold and mahogany, matures rapidly and supplies good cutting material for bouquets. Combined with candytuft or baby's breath, which may be sown at the same time, other interesting combinations are possible.

Quick Growing Kinds

Nigella, or love-in-the-mist, a dainty, feathery, sky blue flower, looks well if planted in masses. Shirley poppies sown in June will give weeks of gay blossoms. Calendulas are better sown late, in June, for strong, healthy plants that bloom until the last killing frost. They flower best when nights grow cooler. Marigolds and small flowered zinnias, such as the Lilliputs, supply the garden, as well as the home, with plenty of color.

Most annuals need a maximum amount of sun for best results, along with a minimum of care. An occasional feeding with liquid fertilizer, watering during dry weather and staking, at least the tallest kinds, are basic requirements.

It's fun to pick newly open flowers for bouquets, but remember to snip off faded heads before they go to seed in order to insure continued bloom until frost.

Floribundas Bloom Long

From page 314

The 1956 All-America Rose Award Winner was Circus, with tight buds richly marked with red. As they open the dominant yellow of the petals appears. Fusilier, the 1958 winner, with large flowers of luminous orange-red appearing continuously in heavy clusters, is a favorite. Even though they are not recent developments, Pinocchio and Red Pinocchio are still highly regarded. The smaller blossoms open slowly, a characteristic indicating their hybrid tea parentage.

Among the more delicate colors is Moonsprite. Urn-shaped buds of pale yellow open into broad chrysanthemum-like flowers. The plant is low growing with glistening light green foliage. The 1957 winner, White Bouquet, with pure white gardenia type fragrant blooms, deserves a place in the garden. The flowers which are constantly produced, open slowly, eventually exposing a circle of golden yellow stamens. This makes an excellent low plant for the front of the border.

An unusual floribunda is Masquerade, a vigorous plant bearing a carnival color range by itself. The yellow buds open to deep pink semi-double blossoms that change to a light orange and eventually to red. Fashion, which has pointed Chinese red buds, is similar to a miniature hybrid tea when open.

Rosenelfe and Irene of Denmark are both ideal for a corsage because of their exquisitely formed buds, one delicate pink, the other a pure white. Another used often in a corsage is Cecile Brunner, with small pink flowers.

Because of their clean, active growth, extended period of heavy bloom and broad color range, floribundas have many uses. Some make superb specimen plants, particularly the more robust varieties, such as Wildfire, with brilliant red blossoms, or Summer Snow, with clear white flowers in profusion. Also popular is Siren, which bears a profusion of ruffled flowers in scarlet.

JACKSON & PERKINS

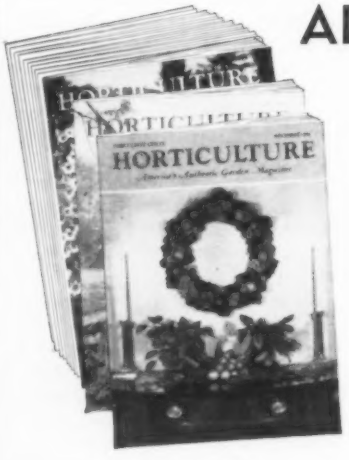
Floribunda variety Spartan

In contrast are the low growing compact floribundas that make an ideal low hedge or serve as accents in the shrub border. Some are used in the foreground of the hybrid tea bed. In this class are fragrant Betty Prior, with pleasing single pink flowers, Pigmy Red, coral colored Vogue and China Doll. Pigmy Red seldom grows more than one foot in height. Garnette, 18 inches tall, is often covered with deep red blossoms.

A taller hedge, four or more feet in height, will be the result if Frensham is the selection. A broad, tall bush, it easily carries 100 cerise blossoms at a time. Equally attractive for a hedge or specimen plant is Embers.

The low growing Lilibet, with clusters of shell pink blossoms, is ideal for the tub or window box. Goldilocks serves equally well, while its warm, yellow flowers are always pleasant. If a more brilliant color is desired for the terrace tub, use blood-red Chatter.

The uses of floribundas in the garden are many and varied. They may be planted between evergreens, along a picket fence, among shrubs or lining the drive. In whatever way they are used, plants will provide color from May till frost with a minimum of care.



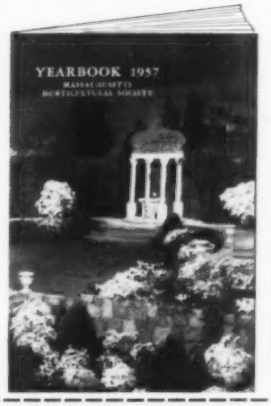
ALL THIS FOR *only* $8.00

◄ **Twelve issues of HORTICULTURE**

(Subscription $4.00 a year)

A Copy of the Yearbook ►

A ticket to the Spring Show ✓ A ticket to the Autumn Show ✓ Use of the Society's Library. Only members may borrow books (by mail if you wish—no matter where you live). ✓ Plus Privileges listed below.



When You Join . . .

The Massachusetts Horticultural Society

A Sound Investment for 365 Days

Additional Privileges

✓ Consultant service with horticultural experts by mail, by phone or by personal call at Horticultural Hall. ✓ Admission to all lectures and special events sponsored by the Society.

The Massachusetts Horticultural Society
300 Massachusetts Avenue
Boston 15, Massachusetts

PLEASE PRINT NAMES AND ADDRESSES

Gentlemen: $8.00 enclosed ☐

Please enroll.....
as an annual member of the Massachusetts Horticultural Society

Street Address.....

City.....State.....

Violas Grow in Shade

From page 331

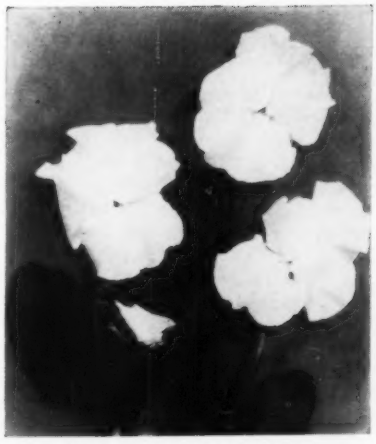
habit of growth. Superior is the variety Chinese Blue, compact and true blue in color. It resembles an older type that I knew as Firmament.

Satisfactory in every way is *V. lutea splendens,* which grows thickly and is generous with its yellow blooms. In each group, I prefer to choose those with clear, neat faces, without black lines, since they have a more crisp and fresh appearance.

White Perfection is so exquisite that no garden should be without it. Its snowy white flowers are cool and restful in the shadowy corners, but everywhere it is used it soothes and brings harmony among its companions. Avalanche is also a good white.

Apricot I have replaced with Chantryland, which seems stronger and hardier. Orangey-apricot violas, such as these, have great appeal, though they are difficult to place in the garden. Only soft blue or lavender harmonize with them, while rose or pink clash.

Georgia Peach in the orangey-apricot group is a new introduction that is more congenial with its neighbors. Flowers, large and ruffled, are soft apricot, verging on yellow instead of orange. Arkwright Ruby, a near brick red, is also difficult to place. Rich and attractive by itself, it requires careful forethought to plant it where it will look best.



Viola variety White Heart

Floraire, a cool, lavender-blue and white viola originated in Switzerland. Once planted in the garden, it is apt to stay around indefinitely, since little seedlings crop up in unlikely places.

Bosnian or Eggleston violet (*V. elegantula*), a small, wild type, formerly known as *V. bosniaca,* is choice and attractive, with small, rosy-purple flowers above the flat, shiny foliage.

Royal Robe, a deep violet-blue, is noted for its fragrant blooms. Plants grow into large clumps and may be divided when finished flowering to make new plants. A new group of violas, recently introduced in Oregon, have been given feminine names. Particularly lovely is Nancy, a sky blue.

Violas do best in a light soil that is cool and rich and in dappled shade cast by tall trees during part of the day. To provide plant food and humus, compost or dried manure may be worked into the soil each spring.

In northern areas, winter protection with salt hay or evergreen sprigs or a light covering of pine needles, to prevent heaving and root exposure, is recommended. In southern gardens, protect from late afternoon sun.

Cool nights and warm days will induce plants to bloom freely and for a long period. Remove faded flower heads before seed formation.

Beautify your home and garden the modern way

with nichols NEVER-STAIN rustproof aluminum

grass stop

- Maintain neat formal appearance around trees, borders and gardens
- Eliminates trimming — saves back and knees
- Easy to set into ground — will not rust

- Heavy weight aluminum with safety edge
- Available in 4″, 6″ and 8″ widths in continuous coils

Guaranteed by Good Housekeeping

and nichols NEVER-STAIN rustproof aluminum

Flower Fabric

- New modern beauty for climbing flowers and vines
- No painting ever — will not rust
- Lasts indefinitely
- Easy to put up — all hardware included
- Size — 24 inches wide by 8 feet high

Look for these exciting NEW garden items in the red, white and blue packages at your favorite nursery, hardware and building supply dealers.

By the makers of Never-Stain Aluminum Nails, Clothesline, Flashing, Building Corners, Trellis, Home and Garden Wire

nichols

WIRE & ALUMINUM CO., DAVENPORT, IOWA

Sturdi-Built Greenhouses

HERE IT IS! Your chance to get a greenhouse with *newest type prefabrication* ever offered! Dates all other methods! Lifetime-Redwood! Drip-proof construction! And world's lowest prices. For a greenhouse complete above base with glass, prices start at only $199! Freight prepaid! For color catalog showing sizes and styles, write Sturdi-Built Manufacturing Co., 11304 S. W. Boones Ferry Road, Portland, Oregon.

STILL TIME TO PLANT

FANCY LEAVED

CALADIUMS

Number One Size

1½ to 2½ Inches in Diameter

6 FOR $2.00

12 FOR $3.75

POSTPAID

CLAUS BROTHERS

3450 Germantown Ave. Philadelphia 40, Pa.

WILD FLOWERS *and* FERNS

Many kinds, to brighten a shady nook. Ferns for many uses. Also young Ornamental Trees and Shrubs for low-cost home landscaping. Send now for Free Catalogue.

WAKE ROBIN FARM

Box 33-H, Home, Penna.

Beautiful IRIS

PEONIES • DAY LILIES
POPPIES • BULBS

FREE! Colorful Catalog

WASSENBERG GARDENS

"The Peony City"

Dept. H-6, VAN WERT, OHIO

Paint and Be Happy

Learn Secrets of Oil Painting by Mail
Exciting Home-Lessons Simplified & Illustrated
$1.00 brings Trial Lesson, specify which Course
☐ Landscape
☐ Still-Life
☐ Portraiture
No salesmen. No contracts. No age limits.
ROLAND PIERSON PRICKETT
Pinewind Studios Monterey, Massachusetts

Iris Rarities

Japanese Irises in wide assortment; Giant Hybrid Garden Irises; Dwarf Irises; rare beauties in Species Irises. Illustrated catalog, Seeds—Bulbs—Plants, on request.

PEARCE SEED COMPANY

Moorestown Dept. B New Jersey

Summer Lawn Care

From page 324

If mowed at regular intervals before the grass is too high, clippings should be allowed to remain because they will soon disappear and because they return plant food to the lawn when they decompose. Above all do not allow the grass to grow to three or four inches and then cut down to three quarters or one inch height.

When watering, use judgment. First, deep rooting of the grass should be encouraged by withholding water as long as practicable. The soil moisture is a factor in maintaining a green lawn, especially under drought conditions, such as the country experienced during the summer of 1957.

Drought caused discoloration, but lawns of basic turfgrasses came back satisfactorily with the autumn rains. Others composed of temporary grasses or annual bluegrass and crabgrass will have to be renovated or rebuilt.

When weather, soil conditions and personal judgment indicate that the lawn needs water, apply it so the soil is thoroughly moistened to a depth of four to five inches. Watering in such a manner will encourage the basic turf grasses to root deeply. If you are not sure when to apply additional water, dig a narrow hole in the lawn four to five inches deep, or better still, use a soil sampling tool.

If the soil is dry to the bottom, water should be applied gradually at a rate which permits it to be absorbed. Apply water until it begins to run off the lawn, then shut it off for a while. Repeat the process several times until the soil is moist to a depth of four to five inches. The relatively new soil-soakers on the market are well adapted for such watering purposes since the volume of water applied at any one time is not sufficient to cause run-off.

Most lawns will benefit by additional feeding during the summer months, especially if the fertilizer used during the spring was largely water soluble or inorganic, because such fertilizers are used up or leached away by summer time.

The grass plant makes good use of three main fertilizer elements, nitrogen, phosphorus and potassium. These plant food elements are derived from numerous fertilizer materials combined to make a complete turf fertilizer. Most important for turf grass is nitrogen, responsible for the green color and growth of the grass plant.

Phosphorus and potash are needed for root development and for good health and vigor. Therefore, a lawn fertilizer must be relatively high in nitrogen with lesser amounts of phosphorus and potassium. Three types of nitrogen carriers are used in making lawn fertilizers, namely inorganic, organic and synthetic organic.

Inorganic nitrogen sources consist of such fertilizers as ammonium sulfate and nitrate of soda. These are relatively high in total nitrogen content, soluble in water and produce quick growth of short duration. Fertilizers containing a large amount of inorganic nitrogen, when not applied carefully, will cause discoloration or injury.

Watering is one of the most important needs of a lawn during the hot summer months. An underground sprinkling system, such as this, makes task easy and assures a turf that stays green.

Natural organic fertilizers, such as activated sewage sludge, cottonseed meal and castor pomace, are relatively low in nitrogen content. Heat, moisture and bacterial action are required for nitrogen release, though growth response is slower but safer. The synthetic organics include such fertilizers as calcium cyanamid, urea and the more recently developed ureaform.

The first two, although excellent sources of nitrogen for some crops, are "hot" to handle. Their use as fertilizers on lawn turf is restricted to the cool season and in small amounts, even then extreme caution should be exercised.

The new ureaform fertilizers and ureaform compounded fertilizers, now available, are excellent sources of nitrogen for lawn fertilization. They contain a high percentage of nitrogen and possess controlled nitrogen availability, which provides long-season feeding of nitrogen to the grass plants. Each fertilizer may be applied at high rates without danger of injuring the turf.

Ureaform for the above reasons is readily adaptable for fertilizing turf areas, especially if some water soluble and natural organic fertilizer is used with it to provide a quick nitrogen response and to supply trace elements and vitamin-like compounds which the grass plant needs. Ureaform compounded fertilizers should be balanced with phosphorus and potash to provide a complete turf grass fertilizer, with the amount dependent upon the soil requirements in different parts of the country.

Many brown patches and brown areas in lawns are not due to diseases but to other sources, such as dogs, mats of clippings, excess compost-topdressing, excess loam, excess peatmoss, leaves, boards or other objects, which cause smothering if allowed to remain for any length of time.

Other brown patches are often caused by chemical burn from herbicides, fungicides, certain fertilizers when applied to moist turf, over-lapping of fertilizer, excess commercial fertilizer, lime, insecticide, oil and gas. Likewise, insect grubs, such as June beetle, Japanese beetle, Asiatic beetle and others, are responsible for some brown patches.

A few hours' work on your lawn during the summer months will be repaid many fold in the form of a more beautiful and useful lawn for play and recreation.

Popular-Priced Rose Books

1. ANYONE CAN GROW ROSES
by Cynthia Westcott **$3.00**
Dr. Westcott, best-known as the plant doctor, has produced a down-to-earth book on rose growing which every rose enthusiast will thoroughly enjoy and profit by.

2. CLIMBING ROSES
by Helen V. P. Wilson **$3.95**
All the kinds of climbing roses, their uses and general care are presented with eight pages of color and 48 pages of halftones.

3. THE GUIDE TO ROSES
by Bertram Park **$5.95**
International rose manual by great English authority. Describes over 1350 roses in commerce, in England, France and U. S. Tells latest, best ways to have success. 64 color plates, 320 pages.

4. ROSES FOR EVERY GARDEN
by Dr. R. C. Allen **$4.50**
This particular book is a revision of one written several years ago but will be entirely new to gardeners of recent date. It covers the whole range of rose growing activities so thoroughly that no other guide is needed.

5. POULSEN ON THE ROSE
by Svend Poulsen **$3.00**
This book contains the accumulated experience of a life-time devoted to roses. Beginning with a detailed description of the chief varieties of the wild rose, he goes on to describe the choice, planting and care of the various types, taking the reader through the seasons, dealing with every eventuality that is likely to occur.

Order today from HORTICULTURE's Book Dept. J8
300 Massachusetts Avenue, Boston, Mass.

Prices quoted are postpaid — Order Books by Number: 1 2 3 4 5

Please send me books circled.
☐ Check or ☐ money order enclosed.

NAME .....
STREET .....
CITY ..... ZONE ..... STATE .....

FOR LAWNS, TREES FLOWERS and SHRUBS

Gardenure

COMPOSTED COW MANURE

Made from rich Chicago Stock Yards cattle manure

- Gives soil "New Life"
- Conditions Soil
- Supplies Humus
- Feeds Plants

• Weed free • Will Not Burn
• No Offensive Odor • Holds Moisture

Available for the first time to replace the mess and bother of raw manure or homemade compost.

Gardenure

If Not Available At Your Dealer, Write
CONRAD FAFARD, INC.
Box 744 Springfield, Massachusetts

TREE SERVICE
WITH A SENSIBLE ATTITUDE TOWARD COST
Amalia
Inc. MANCHESTER, MASS. 200 ANDOVER 1948

• NEW •
KITCHEN HERB CHART
IN COLOR
Decorative and Useful. Designed to Improve Your Culinary Skill
Send Today — $1 Postpaid
THE HERB SOCIETY of AMERICA
300 Massachusetts Ave. Boston 15, Mass.

25 for $5.
TREES ..
3 to 5 yr. healthy, selected trees, 6" to 16" tall. 5 each of: Colorado Blue Spruce — Norway Spruce — Austrian Pine — Scotch Pine — Douglas Fir.
Postpaid at planting time
Write for Free Evergreen Catalog
MUSSER FORESTS Box 8-F Indiana, Pa.

FREE! Stern's 1958 Spring Catalog

New ideas for your garden
STERN'S NURSERIES
Dept. 141, Geneva, N. Y.

BEAUTIFUL SUB ZERO ROSES
Add charm to your home garden. Order now for Spring planting. *Write for FREE Catalog.*
Originator of the Famous Sub Zero Roses
BROWNELL ROSES
Box H LITTLE COMPTON, R. I.

You Are Invited to Join
THE GOURD SOCIETY OF AMERICA, INC.
300 Massachusetts Avenue, Boston 15, Mass.
Dues $2 Yearly — Includes 3 Issues of Gourd Bulletin
The Garden of Gourds, by L. H. Bailey — $3.00
(Reprinted — Limited Edition)
Seeds for sale 35¢ pkt. Postpaid

BOOK MANUSCRIPTS
CONSIDERED
by cooperative publisher who offers authors early publication, higher royalty, national distribution, and beautifully designed books. All subjects welcomed. Write, or send your MS directly.
GREENWICH BOOK PUBLISHERS, INC.
Attn. MR. VENABLE, 480 FIFTH AVENUE
NEW YORK 17, N. Y.

BORERKIL®
Kills most Borers in trees, shrubs, flowers Safe and easy to use. No trenching or mixing. BHC vapors kill Borers. Complete with applicator. $1.00 per tube at most dealers or order direct.
Lethelin Products Co.
15 MacQuesten Pkway. So.
Mt. Vernon, N. Y.

LIFETIME
PLASTIC MARKERS
SEND FOR FREE CATALOG, *DEPT. H-2*
P.O. Box 158
MILFORD, MICHIGAN

ALUMINUM GREENHOUSES
by
STEARNS GREENHOUSES
98 Taylor St., Neponset, Boston 22, Mass.

NEW ENGLAND'S FINEST
TREE PEONY
For FREE Catalog Write
MARINUS VANDER POL
Route 6, Fairhaven, Mass.

Address Change!
Please allow 8 weeks for a change of address. Send your old address label and the new address with the date it becomes effective.
HORTICULTURE
Circulation Department
300 Massachusetts Ave., Boston 15, Mass.

Summer Camellia Care

From page 325

cooling effect of such treatment, which, however, does not replace soil watering. In arid sections of Texas overhead mist sprayers that run automatically, cooling the plants and reducing evaporation, are being used. Greenhouse-grown plants and those grown indoors in containers appreciate similar treatment because it raises humidity.

In the deep south watering should receive special attention in late summer if the usual heavy rains do not materialize. Should the weather be hot and dry, camellia buds may dry out and drop or fail to open properly. Severe dehydration may cause foliage to drop.

However, gardeners in cold climates (and camellias are now grown far beyond the "camellia belt") should reduce water around mid-August until plants harden off, then resume normal watering until freezing weather comes.

Mulching Always Helps

An adequate mulch is the salvation of many camellias, not only in summer but in winter, too. A two- or three-inch covering of peat moss, oak leaves, pine needles, leafmold, grass clippings or similar materials helps to retain moisture in the soil and keep the roots cool during hot weather. The soil should be thoroughly watered before the mulch is applied.

The mulch will need renewing periodically, especially at the beginning of summer. Spring winds will have blown some of it away. Material that tends to pack should be removed and replaced, while loose material should be augmented. In preparation for cold weather further mulch renewal may be needed.

A mulch also discourages weeds, but if any appear pull them by hand. Hoeing around a camellia is dangerous because roots are so near the soil surface.

Acid soil is a must for camellias. Using acid-type mulch helps to maintain the desired pH of 5.0 to 6.0, especially if it is necessary to offset the alkaline content of city water. If camellias are vigorous and healthy, it can be assumed that the soil is adequate in character. If, however, plants are sickly a soil test is recommended.

Give camellias an application of azalea-camellia fertilizer shortly after flowering and a second the following month, but none later than June. Then in September (mid-August in the north) an application of 0-10-10 or other low-nitrogen mixture will help harden growth and prepare plants for cold weather and proper flowering.

To apply fertilizer, rake back the mulch, scatter the plant food in a circle a few inches out from the trunk, water it thoroughly and replace the mulch. Each brand of fertilizer will specify the amount to use. Too much fertilizer is as bad as too little. Plants in pots require less than those in the garden.

Summer is the time to take camellia cuttings, a splendid way to increase a collection. This is done in June and early July in Florida and Georgia and in July and early August farther north. The first step is to fill a box with coarse vermiculite and wet.

Then select the cuttings, choosing from well seasoned new growth that has been tested by bending the twig between the fingers. If it is limp it is too green. If it is brittle and likely to snap off, it is ripe enough for propagation. A terminal shoot, three inches long, cut on a slant, makes a good cutting. Remove all but three leaves.

Then insert the cutting in moist vermiculite, water well and set the cutting box, which is raised off the ground in a shady place. Water twice a week, but if nights are cool, cover the box with glass. In northern sections, place the box in a coldframe.

The following spring, transfer the rooted cutting to a bed filled with old or dehydrated cow manure, leaf mold and rich soil. In two years, move the plant to a permanent location for bloom the following season.

Disbudding is a chore for late summer to be practiced if quality and not quantity of bloom is desired. There is no need to disbud varieties such as Pink Perfection, which make small flowers normally.

Do Some Disbudding

Disbudding is done when the rounded flower buds can be readily distinguished from the longer, narrower growth buds.. Hold the stem steady and twist off the surplus buds from the crowded clusters. It is advisable to leave buds of assorted sizes to stretch out the blooming period.

Scale is the worst camellia pest, most destructive in warm weather. Spraying is best done in the spring, after all danger of frost is past, and repeated in about six weeks with a third spraying in September if the infestation continues. An oil emulsion can be used in cool weather, but malathion is better for the second spray. Apply the insecticide to the undersides of the leaves where the scales congregate.

Crossandra Has Everything

From page 330

Small plants of crossandra can often be smothered with flowering spikes.

lowed a great number to remain, and much to my chagrin found that the growth of unflowered spikes was arrested until I had removed most of the pods.

Seeds will germinate any time of the year, though least viable in the winter. For this reason, and because seeds prefer a temperature of from 70 to 80° F. to germinate, I wait until the summer months to plant them. Since there is less loss of plantlets from damping-off, I like to start them in dampened sphagnum moss or vermiculite.

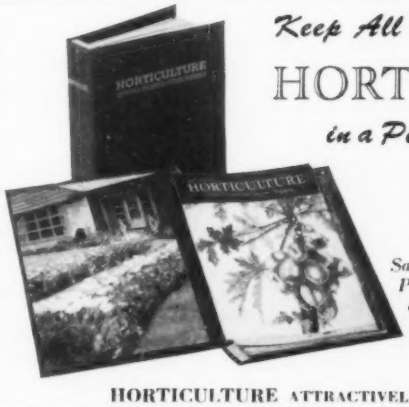
Occasionally, I have had one or two seeds in a planting sprout in five days, but this is exceptional. As a rule, they will take from two to three weeks, though some may take much longer. After the first set of true leaves develops, begin fortnightly feedings of liquid plant food.

When the seedlings are two or three inches high, transplant them to two-inch pots in a soil mixture of equal parts sand, finely screened leafmold and good garden loam. Then pinch back the tops to induce branching. It takes from six to nine months for seedling plants to bloom.

Even though your seedlings have been growing in direct sunlight, once you transplant them be sure to keep them out of the sun or they will wilt. Grow in a light place for a few weeks, keeping soil on the moist side until plants are established. Then gradually give them brighter light.

If, when they reach a height of five or six inches, plants become top-heavy and flop over, a short bamboo stake and a plant tie will hold them up. Inspect them now, and if you find a tiny pinpoint of growth between the axil of leaf and stem or at the top of the plant, you will know a future flower spike is developing.

Cuttings taken from mature plants will root readily at any time of the year.



Keep All Your Copies of

HORTICULTURE

in a Permanent Binder, $2.50

BACK NUMBERS

Now Collectors' Items

Save Horticulture's Beautiful Color Plates: for easy identification of plants and flowers; to help you create pleasing garden pictures; to provide inspiration in staging flower shows.

HORTICULTURE ATTRACTIVELY LETTERED IN GOLD

HORTICULTURE BINDER, 300 Massachusetts Ave., Boston 15, Mass.

☐ Please send me a Horticulture Binder. $2.50. Canada and foreign countries $3.00.

NAME.....

STREET.....

CITY.....STATE.....

Attractive 9-room home situated on 27 acres of upland meadow, ½ mile from picturesque New Hampshire village, magnificent views, 1100' frontage. Modern colonial pine-paneled kitchen with fireplace, 16' x 23' living room, 4 bedrooms, 2 baths, oil heat, full basement, 3-car garage. Unfailing water supply (artesian well).

Attached all-aluminum greenhouse 85' x 17' divided into 3 compartments with individual temperature controls, steam sterilizer, auxiliary power generator, tempered water, alumalath shading, full length roller conveyor, ample storage and work space, oil heat for both greenhouse and dwelling supplying automatic hot water service.

Priced at $36,000

CHARLES F. TARBOX, *Realtor*
324 Main St., Keene, N. H. Tel. EL 2-2139
or
CARL M. PARKER, *Realtor*
Bellows Falls, Vermont Tel. 940

GROWERS OF THE WORLD'S FINEST ROSES
Write for our illustrated catalog of OREGON ROSES
n. VanHoutingen
BOX 5076 H PORTLAND 13, OREGON

Holly

— FREE BOOKLET AND LIST —

EARLE DILATUSH—Robbinsville 3, N. J.

CLEMATIS

Large-flowering perennial vines add beauty to your garden. Profusion of blooms produce a cascade of color. SPECIAL, one vine each of red-, white-, and blue-flowering varieties; all 3 postpaid for only $5.38. Order now; shipped at proper fall planting time. Satisfaction guaranteed.

JAMES I. GEORGE & SON, INC.
Fairport 5, New York

Full Color Catalog FREE

The Bartlett Way
BARTLETT
TREE EXPERTS
STAMFORD, CONN.

Write today for information

GARDEN TOURS

Europe • The Orient • Hawaii • Mexico

JEAN BERKE TRAVEL SERVICE, INC.

Dept. H6, 516 Fifth Avenue, New York 36, N. Y.

MASSACHUSETTS HORTICULTURAL SOCIETY

Iris Show

in cooperation with the N. E. branch of the American Iris Society.

June 10 . . . . . **2–9 p.m.**
June 11 . . . . **10 a.m.–9 p.m.**

Rose Show

in cooperation with the N. E. Rose Society and the N. E. district of the American Rose Society.

June 16 . . . . . **2–9 p.m.**
June 17 . . . . **10 a.m.–9 p.m.**

HORTICULTURAL HALL

Admission Free

MICHIGAN HORTICULTURAL SOCIETY

206 City Hall
DETROIT 26, MICHIGAN
WOodward 3-2252

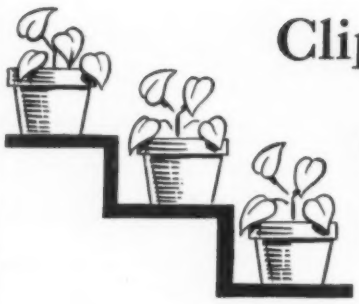
Members please watch this space for announcements

The Michigan Bonsai Club meets with us the 3rd Tuesday each month, 2:00 p.m.

BOOK DAY

In the Library — 2nd Wednesday of the month. We welcome gift books for our shelves.
"Every member two new members" will make '58 memorable!
Let's go!

MRS. LLOYD L. HUGHES
Executive Secretary



Clippings from CLUBS and SOCIETIES

Camden Open House and Garden Day

Several gardens, as well as homes, will again be opened to the public when the Camden Garden Club of Camden, Me., holds Open House and Garden Day on July 17. Gardens to be opened will include "Spite House", the summer home of Mr. and Mrs. Donald D. Dodge, and "Nimaha", the home of Mr. and Mrs. Cary Bok. The house and gardens of "Weatherend", the home of Mrs. W. Griffin Gribbel, are also on the tour.

Proceeds of the event go toward the maintenance of the hanging flower baskets on the lamp posts of the streets of Camden and toward the community plan to hold off the Dutch elm disease. Headquarters for the tour will be the grounds of St. Thomas Episcopal Church.

The Pennsylvania Horticultural Society

389 Suburban Station Building, Philadelphia 3, Pa.

MR. GEORGE R. CLARK, *President* DR. J. FRANKLIN STYER, *Treasurer*
MRS. E. PAGE ALLINSON, *Secretary*

The AZALEA GARDEN given to the City of Philadelphia by the Pennsylvania Horticultural Society is developing into a very beautiful part of the Philadelphia parks system. The original design created by Mr. Frederick W. G. Peck, a member of the Council, is an effective setting for the many choice varieties of azaleas and other plants. There will still be bloom in early June. Those of you who have not yet seen the garden will find a visit rewarding. Those who have seen it need not be told how lovely it is. The garden is located on the East River Drive a short distance west of the Philadelphia Museum of Art.

Consultation Service

One of the valuable perquisites of membership in the Society is the privilege of obtaining professional advice on gardening problems. Free consultation is available by phone, letter or in the office. Our consultant is Miss Margaret Porter, a graduate of the School of Floriculture, Pennsylvania State University. She will come to your garden by appointment for a small fee.

Storm Damage

If you did not receive the bulletin sent by the Society concerning care of trees and shrubs damaged by recent storms and would like to have one, please call the office (RIttenhouse 6-8352).

Honorary Advisory Committee

In order that The Pennsylvania Horticultural Society may have the benefit of the advice of distinguished horticulturists who are not members of the Council, the Executive Council has created an Honorary Advisory Committee. The following have been unanimously elected to this committee: Mrs. James Bush-Brown, Mrs. Arthur Hoyt Scott, Dr. John C. Wister, all of whom are not only horticulturists of world-renown but are also citizens who have made notable contributions to Philadelphia. The Society has been honored by their acceptance.

Seventeen acres of roses, representing more than 36,000 plants, will be on display for the public to enjoy at the Annual Rose Festival of Jackson & Perkins Co., Newark, N. Y., June 15-29.

New Begonia Society Branch

The recently formed Rhode Island Branch of the American Begonia Society held its first regular meeting on May 3 at Daly's Gardens, Coventry, R. I. Elected as officers were Mrs. Virginia Withee, Coventry Centre, President; Mrs. Earl Harrington, Edgewood, Vice-president; Mrs. Geraldine Daly, Coventry, Secretary; Mrs. John Grady, Providence, Treasurer, and Mrs. John McShane, Fiskeville, Representative Director to the National Board of the American Begonia Society.

Wild Flower Course

The New England Wild Flower Preservation and the Massachusetts Audubon Societies are jointly sponsoring a Course in Wild Flower Identification at the Ipswich River Wildlife Sanctuary, Topsfield, Mass. on June 11 and 18, 10-12 A.M. and 1-3 P.M. (Bring box lunch). The date for an all-day field trip will be decided by the group.

Mrs. Lucien Taylor, President of the Wild Flower Society, will teach the course. The fee for members of either Society is $5.00 and $6.00 for non-members. For additional information or to enroll, write or telephone Elmer Fove at the Wildlife Sanctuary, Topsfield, Mass., Tucker 7-2241.

Massachusetts Federation Awards

At its 31st annual meeting, the Garden Club Federation of Mass., Inc., presented the following Awards of Merit: to the Temple Garden Club of Brookline in recognition of its outstanding Flower Show Achievement; to the Belmont Garden Club in recognition of its outstanding Flower Show Achievement. Also a recipient of its Award of Merit was the Cottage Gardeners of Marblehead in recognition of their outstanding Flower Show Achievement.

The Special District Award, the Evelyn R. Cole Silver Bowl, was presented to the Northeastern District, Director, Mrs. George E. Taylor, for outstanding accomplishments.

Certificates were presented to: Mrs. Ulysses Auger for her outstanding achievement and leadership with Juniors in her district; Mrs. Cadis Phipps for influencing the activities of our members toward the protection of our National Resources; Mrs. Arthur P. Teele for invaluable and unselfish service as a teacher, scholar, writer and flower arranger.

Other recipients of certificates were: the Town of Barnstable and its Highway and Park Departments for creating and maintaining a series of small gardens throughout the town; the Springfield Garden Club in recognition of its contribution to education; the Sudbury Valley Trustees, Inc., for their efforts in saving 350 acres of land in Wayland for development according to the best conservation practices.

Portland Rose Festival

A 13-block area in downtown Portland, Oregon, will be the setting for the Golden Rose Festival on June 10-15. One entire block will be devoted to displays of local garden and flower groups, including the Federated Garden Clubs of Multnomah County, the Portland Men's Garden Club, the Orchid Society of Oregon, the Herb, Geranium, Primula, Fuchsia, Begonia and Iris Societies and the Lake Oswego Lily Committee.

A miniature display of "Syncopated Waters" from New York will be one of the major attractions. This fountain of colored light and water can be "played" like an organ for a variety of effects.

A tour of several of Portland's private gardens will take place on July 12-13. The annual Rose Show will be staged in Masonic Temple.

JOIN . . .

The Pennsylvania Horticultural Society

and enjoy many privileges for a small fee

Subscription to HORTICULTURE

Consultation on gardening problems

Lectures

Free tickets to flower shows

Visits to private gardens

Circulating Library

Many Other Privileges

●

Annual fee: $5.00
Life Membership: $100.00

●

389 Suburban Station Building
Philadelphia 3, Pa.
Phone: RIttenhouse 6-8352

Make Hanging Baskets

From page 320

Hanging tuberous begonias do well in baskets because they have plenty of room to spread out their leaves and blossoms. Avoid pinching taller kinds, but basket types will benefit greatly from nipping to make them branch.

Achimenes is another choice candidate, though it will not stand cold. Requiring a sheltered location, if you have been successful with episcias, you will not find achimenes too difficult. *Episcia chontalensis* and *E. fulgida* make especially handsome basket plants.

Few plants are easier than fuchsias. The new pink and white petticoat varieties, such as Rosy Wings and Swing Time, are especially attractive because their weak stems are ideal for hanging. Remember that they are greedy and therefore like heavy feeding. They are also favorites of the white fly, so keep malathion handy.

Ivy-leaved geraniums went out of fashion for a while, but are now popular again. These are tough, hanging plants, which thrive well in morning or afternoon sun. Feed them periodically to keep in thriving condition. Also, do not overlook lantanas, which may be lavender, orange or yellow.

Weston Nurseries, Inc.
Route 135, Hopkinton, Mass.
Brown & Winter Streets
Weston 93, Mass.
HOPKINTON IDlewood 5-4011
WESTON CEdar 5-3431
We Ship New England Only

KEEP AMERICA BEAUTIFUL
Every car needs a
NANCHA TRAVEL TRASH BAG
Size 14x10. Quilted plastic. Gray, green, red, black, oyster white, metallic blue. $1.25 ppd.
Satisfaction Guaranteed
LOUISE M. RICHARDSON
P. O. Box 218 Reading, Mass.

Now Is the Time for . . .
PLANNING YOUR SPRING PLANTING
See Woodbury McDade Bartlett at
BARTLETT GARDENS
ROUTE 22 • HAMILTON, MASS.

FREE CATALOG of IRIS and DAYLILIES
Printed in color. Write
EDENWALD GARDENS
Dept. E VINCENNES, INDIANA

NOW! IS THE TIME
to Subscribe to HORTICULTURE
America's Authentic Garden Magazine
Here are only a few of the many features HORTICULTURE will give you to help make your home surroundings more beautiful.
- Floral Arranging
- Indoor Growing
- Outdoor Growing
- Coming Events
- Clubs—Societies
- Readers Questions Answered
- 6 Pages of Beautiful Color—to Frame
- What's New in Gardening
- Plus Many More Subjects

☐ 1 YEAR $4.00
☐ 2 YEARS $7.00 (You save $1.40) *
☐ 3 YEARS $9.50 (You save $3.10) *
* OVER SINGLE COPY PRICE.

NAME.....
ADDRESS.....
CITY.....STATE.....
HORTICULTURE, 300 Mass. Ave., Boston 15, Mass.

Fuchsias in Pots

From page 321

the standard or tree shape and the hanging or trailing type. Choose the variety best suited by its habit of growth before starting any certain type.

The bush type is the easiest and most popular to grow in pots. It naturally forms low branches of light to medium wood, yet is strong enough to form compact, bushy plants.

Common red clay pots are excellent for potted fuchsias. A small bush plant can be grown and maintained successfully during a season in a six-inch clay pot. The larger the bush, the larger the pot must be, yet do not overpot fuchsias. It is far better to have a large plant in a small container than to place a small plant in a large container.

Try a Tree Fuchsia

The standard type is formed by training a crown of branches at the top of a single straight stem. Standards range in size from a small table-standard, 14 inches high in a six-inch pot, to a seven-foot giant in a wooden tub or five gallon can. Fuchsia trees require careful staking and tying and take several years to train.

Hanging types are grown in 10 to 12-inch wooden or wire baskets or wired clay pots. They are suspended in the air so that the branches cascade down from the rim of the container. Only fuchsia varieties capable of producing many pendant branches should be used.

The ideal potting mixture for fuchsias is ⅓ cow manure, ⅓ oak leafmold or peatmoss and ⅓ rich, sandy loam or compost. The humus content, after planting, can be maintained by feeding the plants with organic materials, such as the liquid fish fertilizers.

When potting fuchsias, begin by preparing for good drainage. Place a large piece of broken pottery over the hole in the bottom of the pot and cover with an inch or more of coarse gravel. Be careful that the drainage hole does not become stopped up. Fuchsias drown quickly in soggy, sour soil. Generous watering with complete drainage serves potted plants best. Never permit roots to dry out completely, as few plants will droop quicker when deprived of water. Judicious watering is important.

To grow a specimen repot a strong young plant into a six-inch pot. As the roots develop, increase the pot size as needed. With hanging basket plants, two or three young plants in four-inch pots may be transferred to a 10 or 12 inch pot. No further repotting is required. Keep the soil level one inch below the rim for watering.

Training of potted fuchsias must be started early. As side laterals appear, let them produce two sets of leaves, then carefully pinch out the growing tip. From the leaf node of each pinched tip, two branches develop. Thus, pinching forces more branching, and the amount of pinching will determine the size and shape of the plant.

For a well rounded, compact bush, pinch all top and side tips. Take advantage of the fuchsia's habit of growing toward light by turning plants often.

A standard must be staked, keeping the main stem straight and the growing tip protected until the desired height is reached. Remove all laterals along the stem. When the desired height is reached, pinch out the tip to throw strength into the laterals at the top to form the tree crown.

Continue to pinch new growth on hanging basket plants until the top of the pot is completely covered with a fine framework of branches. Once a full crown has been established, allow the branches to grow. As soon as a potted plant is shaped, stop pinching so flower buds will form.

Potted fuchsias should be fed every two weeks. A sustained feeding program will produce large flowers throughout the blooming season. Plant foods high in nitrogen soften the branches and should be used for standard and trailing forms, but use nitrogen sparingly where stiff branching is desired. Phosphates, primary producers of buds and blooms, are best for bush plants. Pick off wilted flowers and seed berries for continuous bloom.

Some Single Varieties

Some of the best single-flowering fuchsia varieties include Antigone, white sepals and orange-pink corolla; Boliviana, scarlet red; La Bianca, single white corolla and white sepals with green tips; Rose of Denmark, pale rose corolla and pale blush sepals; Sleigh Bells, all white.

Desirable double-flowering varieties are Ball of Fire, bright red; Calypso, tyrian rose; Ecstacy, rose and purple; Crinoline, rosy white sepals and clear rose corolla; Uncle Jules, violet blue and crimson.

Among the trailing varieties for window boxes, hanging pots and baskets, consider Glowing Embers, orange to red corolla and watermelon pink sepals; Mayflower, light pink corolla and deep pink to rose sepals; San Francisco, carmine rose sepals and deep orange red corolla; Anna, carmine petals and magenta corolla.

HORTICULTURE "Green Thumb" Department

• *Classified Advertising* •

Rate 30 cents a word, minimum $6.00, cash with order, 10% discount for three consecutive issues using same copy • Yearly Contract Rate on Request • Closing date 45 days previous to cover date • HORTICULTURE, 300 Massachusetts Ave., Boston, Mass.

African Violets

AFRICAN VIOLET PLANTS, rooted leaves, latest varieties. Unbelievable low prices. Listing for dime, refunded on first order. EASTERBROOK, Butler, Ohio.

AMERICA'S FINEST AFRICAN VIOLETS. Send for free color catalog. FISCHER GREENHOUSE, Dept. HC5, Linwood, New Jersey.

AFRICAN VIOLETS. Originators of Outstanding Varieties. Retail by Mail anywhere. Also Wholesale. OPPENS GREENHOUSES, 4330 Auburn Road, R. Salem, Oregon.

NEW 1958 COLOR CATALOG, listing over 100 varieties. Greenhouses open daily and Sunday afternoon. TINARI GREENHOUSES, Bethayres 4, Pa.

Aquarium and Pool Plants

LACE PLANT "RHUBARB," C. somphongsis, NEW introduction bright red and green, 6/ $2. True Lace Plant, "A. FENESTRALIS," Queen of Aquatics, 6/ $5. Nomaphilla Stricta, "TEMPLE PLANT," new 6/ 75c. LACE PLANT, ruffled leaved, Apongetum undulatum, lovely center, aquarium plants, 75c; rare red form, $2. Lace Plant, poor man's, A. ulvaceous, 75c, 2/$1. Nymphea lotus, rare, extremely dwarf blue water lily, for aquarium or tub, $1. Collection three plants $2. MARY LUDDY, 502 Tremont St., Boston, Mass.

Baby Evergreens

BABY EVERGREENS, SEEDS, SEEDLINGS, ornamentals and Xmas tree stock. Azaleas, Rhododendrons, Flowering Shrubs, Blueberries. CATALOG FREE. GIRARD BROS. NURSERY, Geneva, Ohio.

Birdhouses & Feeders

BEAUTIFUL BIRDHOUSES $1.00 & $1.25 both $2.00. Feeder $1.50 knockdown. Postpaid. Birdhouse plans 15c — Brochure free. YONGHAUS, 617-RT. 23 4-8-A, Wayne, New Jersey.

Bulbs

WRITE FOR NEW, FREE DE JAGER CATALOG listing all of the glorious imported bulbs available for your garden. 191 Asbury Street, So. Hamilton, Mass.

BULBS FOR FALL DELIVERY, daffodils, tulips, iris, hyacinths and crocus. Send for our price list offering generous discounts and premiums for orders placed early. RIVER'S EDGE FLOWER FARM, Nuttall, Gloucester County, Va.

RAINBOW SELECTION of Jumbo glad bulbs — 100 for $5.00 or 50 for $3.00 postpaid. Guaranteed giant blooms. Planting instructions included. WOODSIDE GLADIOLUS GARDENS, Webster, New York.

TULIPS, HYACINTHS, etc. Send for FREE catalog. Bonus for early orders. BUCK'S PERENNIAL GARDENS, 128 Brightside Avenue, Pikes 8, Md.

Business Opportunities

WE PAY $3.50 lb. dried. Grow Mushrooms. Cellar, shed and outdoors. Spare, full time, year round. We have 25,000 customers. FREE BOOK. WASHINGTON MUSHROOM IND., Dept. H, 2954 Admiral Way, Seattle, Washington.

Caladiums

CALADIUM BULBS: Six named varieties $2.00, twelve for $3.75 postpaid. CLAUS BROS., 3450 Germantown Ave., Philadelphia 40, Pa.

Chrysanthemums

RARE SPIDERY FUJI CHRYSANTHEMUMS: 2 each 6 kinds, dozen $3.00. Single Poms, Buttons, 2 each 10 kinds, $3.00. Labeled. Prepaid. GABLES' NURSERY, Haralson, Georgia.

NORTHERN HARDY CHRYSANTHEMUMS — Unrooted cuttings. Easy outdoor rooting directions. Gorgeous assortment. 40 — $1.00; 100 — $2.00. Rooted plants, assorted, 10 — $1.00; 30 — $2.50. Directions. Postpaid. BURNETTE GARDENS, Assumption 16, Illinois.

Daisies

GERBERAS-TRANSVAAL DAISIES, double flowered varieties. The finest perennial in existence. Field grown blooming clumps. 2 to 3 crown, $5.00 per doz., $32.00 per 100. FRANK HUNT NURSERY, P. O. Box 311, Encinitas, California.

Daylilies

CIBOLA, Colonial Dame, Garnet Robe, Flamboyant, Howdy, Mabel Fuller, Ming, Naranja, Potentate, Lochinvar, Cathedral Towers, Salmon Sheen, Villanella, Painted Lady, Jewell Russell. Any 7 for $5.50, 10 for $7.50, postpaid, free list. M. T. YOUNG, Tallulah, La.

Flower Arranging Books

TWO FLOWER ARRANGING BOOKS — featuring Driftwood, reduced — both $3.00. New ABC of Driftwood For Flower Arrangers — $4.00. All books ppd. and autographed — FLORENCE M. SCHAFFER, Kingsburg, California.

Flower Arrangement Supplies

EVERYTHING FOR FLOWER COMPOSITION — bases-books, containers, dried materials — New 32 page catalog (10c), FLORAL ART, Highland Station, Post Office Box 394, H2, Springfield, Massachusetts.

FLOWER CLIPPERS, best indoors, outdoors. Long, slender blades. $3.25 from flower arrangement catalog, $2.90 direct. DOROTHY BIDDLE SERVICE, Hawthorne 41, New York.

Garden Supplies

PROTECT YOUR BERRY CROPS — Cheesecloth 100 yards by 52", convenient 10-yard lengths, $7 prepaid. 50 ¢ less than mill price. J. HEIN, Thornwood, New York.

Garden Tractors

SENSATIONAL GARDEN TRACTOR. Hoes between plants and rows, including strawberries. Eliminates hand hoeing. Nothing else like this. Patent 2742840. Also tills. Fantastic offer to first few inquiries. AUTO HOE, DePere 62, Wisconsin.

Geraniums

FRAGRANT GERANIUMS — Apple, Peppermint, Nutmeg, Southernwood, Ginger, Filbert, Lemon, any 6, $2.50. Catalog 25c. List free. MERRY GARDENS, Camden, Maine.

ZONAL GERANIUM CATALOG 10c. Finest varieties. Novelties. Dwarfs. Fancy-Leaved. HOLMES C. MILLER, 280 West Portola Avenue, Los Altos, California.

Gladiolus

ALL AMERICAS, Fire Flame, Top Hat and Blue Smoke are just a few of our 1958 listing of 150 glads. Catalogue free. Wholesale — Retail. WOODSIDE GLADIOLUS GARDENS, Webster, New York.

Greenhouses

REDWOOD. 9' x 12' 9" STURDI-BUILT Greenhouse, everything complete above foundation including glass, only $225.00 delivered. STURDI-BUILT GREENHOUSE CO., 11304 S.W. Boones Ferry Road, Portland, Oregon.

Hardy Cyclamen

ALL SPECIES IN CULTIVATION. Send for list. Large tubers cyclamen neapolitanum, europeum or repandum $2.50 per dozen. DELKIN'S BULBS, Hunts Point, Bellevue, Washington.

Herbs

HERB PLANTS GREENHOUSE GROWN, 75c each — Tarragon, Rosemary, Oregano, Upright & Creeping Thymes, Scented Geraniums, Sweet Woodruff, Lemon Verbena among many listed in free catalogue. Minimum order 6 plants. Add 15% for packing and postage. STILLWATER GARDENS, Salisbury, Conn.

EVERYTHING FOR THE HERB GARDENER — Large variety of Terrace Thymes — Herb Plants — Seeds — Products — Thursday Luncheon Programs — Grower's Handbook — 75c Midsummer Booklet — 75c. CAPRILANDS, Coventry, Connecticut.

Hollies

AMERICAN-CHINESE-ENGLISH-VARIEGATED—Extra quality-container grown OUTDOORS. Plant anytime. Send 25c to "HOLLIES", Manheim 8, Pennsylvania for complete list and booklet.

House Plants

RARE HOUSE PLANTS. 500 varieties, old and new, including beautiful exotics. Catalog 25c. Complete cultural instructions. BARRINGTON GREENHOUSES, Dept. X, Barrington, N. J.

Iris

MOST COMPLETE AND FASCINATING LIST OF IRIS in commerce. The oldest to the most recent bearded iris in all classes: Dwarf, Median, Tall. All non-bearded types. DAYLILIES, too. Get our 50 ¢ VALUE BONUS on most orders. Free catalog on request. MELROSE GARDENS, Rt. 6, Box 424-H, Modesto, Calif.

12 VARIETIES CHOICE IRIS, $3.50 to $5.00 value, $2.00. 9 varieties Hemerocallis $2.00. Labeled 5c per plant extra. Catalog free. L. FREUDENBURG, Battle Creek, Nebraska

SUPERIOR OREGON RHIZOMES OF IRIS; New varieties. Satisfaction guaranteed. Catalog on request. KATHERINE'S GARDENS, 3563 Jacksonville Highway, Medford, Oregon.

BROWN'S EVERBLOOMING IRIS — Garden catalog free. Address May to November, Central Village P.O. Mass. — November to May, Barre, Mass.

IRIS FANCIERS — Add new beauty to your collection from our Select Listing of over 350 modern varieties — Guaranteed quality-reasonable prices — Gift with every order — Write for free catalog. NOW — BROWN'S SUNNYHILL GARDENS — Rte 4, Box 45 H, Walla Walla, Washington.

MINIATURE IRIS — 12 different labeled $2.50, 15 different unlabeled $2.25 postpaid. Free catalog. LAWSON GARDENS, Valley Center, California.

Magazines

NATIONAL GEOGRAPHIC MAGAZINES 1888–1956. Any issue. Send want list. PERIODICAL SERVICE, Box 465-HC, Wilmington, Delaware.

Myrtle

MYRTLE (VINCA MINOR). Fifty nice well rooted plants $6.00 postpaid. Hundred $10.00 postpaid. CHARLES K. STOTLEMEYER, Swann's Wood, Hancock, Maryland.

Orchids

BEAUTIFUL ORCHIDS. Home or greenhouse. Fine plants, reasonably priced. Send for Special Offer. LA HACIENDA DE BELLONA, 11720 Killian, El Monte, California.

Plant Markers

PLANTS NAMED PERMANENTLY. VINYLITE markers outlast plants. 18, ½" x 3" — 25c, 100 — 55c; make money clubs — individuals. SPENCER COMPANY, 1937 Delta, Los Angeles 26, California.

Primroses

BARNHAVEN'S ANNUAL SALE NOW IN EFFECT. Now is a good time to buy their famous, big, hardy, perennial Silver-Dollar Primroses and other beautiful primroses from Europe and Asia at reduced prices. Something wonderful happens to the shadier parts of your garden when Barnhaven Primroses lay spring at your feet. Write for handsomely illustrated book-catalog (free) and note "Bargain Counter Collections", page 26. BARNHAVEN, Gresham, Oregon.

Rare Shrubs and Trees

RARE SHRUBS AND TREES. Davidia involucrata, Photinia serrulata, Skimmia, Osmanthus, Sarcococca, other choice plants. Write for free list. WOODLAND NURSERY, Hendricks Road, Perkiomenville, R. D. 1, Pennsylvania.

SCIADOPITYS, Lonicera pileata, Aucubas, Ardisia japonica, Chimonanthus, Lonicera syringantha, Abeliophyllum, Bamboo, Ilex yunnanensis, Sophora japonica, Cotoneaster dammeri, Symplocos, Abelia, Skimmia, Albizzia, Sarcococca, V. rhytid, and others. No Catalog. COUNTRY FARM GARDENS, Route 3A, Greenbush, Mass.

Seeds

HIMALAYAN FLOWER SEEDS, 8, 18, 30 beautiful kinds, $1.00, $2.00, $3.00; over 1,000 kinds, 15–22c. GHOSE, TOWNEND, DARJEELING, INDIA. Mature orchids, 250 species, $2.00–$3.00 delivered; rare lilies, plants 25c–$1.00. GHOSE, 3 GLENGARRY, WINCHESTER, MASS.

EVERGREEN SPECIAL — 1,000 seeds — (customer's choice). Arbor Vitae, Blue Spruce, Scotch Pine, White Spruce, Juniper, White Pine — $1.00. All six varieties $4.00. Instructive 40 page catalog alone 10c. MELLINGER'S HM, North Lima, Ohio.

Sweet Onion Plants

SWEET ONION PLANT ASSORTMENT. Approximately 500 plants. $2.00 prepaid. Fresh from TEXAS PLANT CO., Box 871B, Farmersville, Texas. "Home of the Sweet Onion."

Tomato Yearbook

TOMATO GROWERS — Just published 1958 American Tomato Yearbook. Crammed with important facts. Send $2.00. Complete volume 1951–1958, $10.00. AMERICAN TOMATO YEARBOOK, Box 540-H, Westfield, New Jersey.

Violets

SPRING'S KEEN GREEN WINDS BRING VIOLETS. Nature's fragrant ground cover, hardy everywhere. VISTA VIOLET FARM, 1211 Monte Vista, Vista, Calif.

Water Lilies

FREE: NEW WATER LILY CATALOG. Sent *only* on request. 13 NEW LILIES. Complete planting instructions. How to build pools. VAN NESS WATER GARDENS, Rt. #1, Dept. H, Upland, California.

Wildflower Seeds

500 KINDS WILDFLOWER AND NATIVE TREE SEEDS. Catalog 50c — includes "Pines of the World." Write CLYDE ROBIN, Carmel Valley, California.

Position Wanted

ESTATE SUPERINTENDENT — College graduate, 20 years experience in all phases of outside and greenhouse work. Write HORTICULTURE, Box 157, 300 Massachusetts Ave., Boston 15, Mass.

Garden in Window Boxes

From page 319

age. In wooden boxes, holes should be bored in the bottom, one-half inch in diameter and from six to eight inches apart. Place a one inch layer of rubble, coarse gravel, smashed pieces of brick or broken flower pots in the bottom of the box and over this spread a thoroughly moistened sheet of sphagnum moss or a dampened piece of burlap. This will prevent the soil from sifting down into the drainage area.

A good general purpose soil mixture, such as a fertile garden loam well supplied with humus, will meet the requirements of most plants. However, tuberous begonias and fuchsias have specific soil requirements, especially ample acid humus.

Heavy, clay soil should never be used in window boxes as it becomes too compact and during periods of heavy rain completely water-logged, thus preventing the plants from obtaining sufficient oxygen.

If one prefers, peatmoss may be used in window boxes instead of soil. When this is done, potted plants may be sunk in the damp peatmoss. This method, frequently followed in sections of Europe has certain advantages, for it makes possible quick changes in plants whenever it is desirable.

A good maintenance program includes faithful attention to watering, occasional feeding and the removal of faded blooms. A mulch of moist peatmoss will conserve moisture. If the foliage is syringed with a fine spray several times a week, plants will remain in good condition. This is particularly advisable in the city where the foliage frequently becomes coated with soot.

To groups interested in community improvement, particularly in city areas, window box projects offer rewarding opportunities. In Philadelphia, the Garden Block Projects, with their window boxes and flower bays, have completely transformed some of the most blighted sections of the city.

Organized by the Neighborhood Garden Association of Philadelphia, the work has been carried on through the cooperative efforts of the Settlement Houses, the Garden Clubs and other sponsoring groups, with the residents on the blocks.

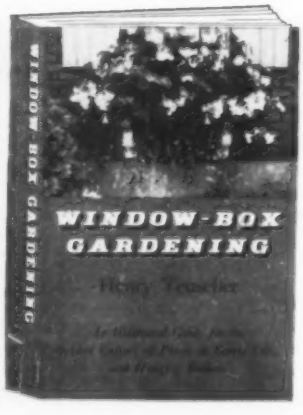
In the spring of 1953 seven Garden Blocks were organized and 427 window boxes were planted. By 1957 there were 122 Garden Blocks with more than 7000 window boxes and flower bays.

In March of this year a Window Box Competition was organized in Boston, under the sponsorship of the Beacon Hill Garden Club and the Beacon Hill Civic Association.

Though planters attached to the house are not, strictly speaking, window boxes, they fulfill the same function. Gardeners who have contemporary homes are faced with the problem of planting them, and though the same plants are used, the matter of drainage requires careful attention. Generally, a heavy layer of cinders, stones, pebbles or other material must be placed at the bottom to catch the water.

Window-Box Gardening BY HENRY TEUSCHER.....$3.95
POSTPAID

Numerous Black and White Photographs • 180 Pages



THIS PRACTICAL BOOK covers the construction, planting and care of window boxes. In three parts, the author discusses the how and why for success with growing plants in boxes, tubs and hanging baskets. The suggestions offered by Mr. Teuscher are based upon experiments carried on at the Montreal Botanical Garden over a 10-year period. His list of more than 100 kinds of plants will be of value to all who are interested in this phase of gardening.

HORTICULTURE'S Book Dept. Enclosed is ☐ Check ☐ Money Order
300 Massachusetts Avenue, Boston 15, Massachusetts

Please send me.....copies Window-Box Gardening.....$3.95 postpaid

Name.....

Street.....

City.....Zone.....State.....

S EXCH
UNIV MICROFILMS
313 N 1ST ST
ANN ARBOR MICH
Box

POPULAR on the West Coast as a form of gardening, growing plants in pots is now widely practiced in various parts of the country. Geraniums and petunias in sun and coleus and fuchsias in shade produce delightful effects wherever placed. Even a single specimen, like the fuchsia we see here, can do much to attract attention and offer pleasure all season long.